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THE SIGNIFICANCE OF LYMPHATIC INVOLVEMENT IN INFECTIONS

WILLIAM J. MAYO, M.D.

ROCHESTER, MINN.

A clinician of great experience once made the statement that if he had his choice between an infection disseminated through the blood stream and one spread by the way of the lymphatics, he would choose the former, giving as a reason that when a noxious agent enters the blood, the whole force of the organism acts on it quickly, with the reasonable chance that it will be carried to some portion of the body with sufficient resistance to develop immunity; whereas, if it enters the lymphatics and is not overcome in the lymph nodes, the toxic agent may be permitted to enter the blood stream more or less continually, and will perhaps eventually lead to an incurable infection. This opinion was so greatly at variance with that of the medical profession at large that I speculated on the number and importance of the facts to sustain it. In the light of various experiences, I studied the relation of the lymphatics to the ultimate prognosis in tuberculosis, syphilis and cancer, all introduced from without through the protective mechanism of the body, and two of which, tuberculosis and syphilis, have identifiable foreign causative agents. We must ever remember Cohnheim's original observation that the source of a given infection can be detected if the sentinel lymphatic gland first showing enlargement can be located.

Besredka has confirmed the experimental work of Noetzel on anthrax. Noetzel demonstrated that rabbits and guinea-pigs tolerate large numbers of anthrax bacilli when injected directly into the blood or the peritoneal cavity without contaminating the cutaneous tissues, amounts which would cause a fatal anthrax infection if injected into the skin tissues, which are rich in lymphatics. This shows that there is a definite relation between the site of the infecting organisms and their toxic effect, and discloses an inviting field for research.

Tuberculosis, syphilis and cancer are, directly or indirectly, the great destroyers of human life. The bacillus of tuberculosis has the well-known bacterial resistance to medications, to which it is more resistant than the human organism itself. If a cure is effected, it is through self-engendered immunizing substances. Since the spirochete, like the plasmodium of malaria, the hookworm, and other larger and better known protozoa, is susceptible of being destroyed by specific medication, it would appear fair to group it with the protozoa, in contrast with bacteria, which Vaughan believes lie between the vegetable and animal worlds. We do not know the cause of cancer, and doubt that it is the result of a foreign intruder; but the cancer cell is, to all intents and purposes, as specific an enemy to the human organism as either the bacillus of tuberculosis or the spirochete.

Many of the ablest exponents in the treatment of tuberculosis believe that if the primary tuberculous focus, where the bacilli enter the protective mechanism of the body, become acclimatized and first involve the lymphatic system, can be removed, the secondary processes will thereby be rendered much more amenable to treatment. These investigators evidently believe that the strain of bacilli of tuberculosis becomes more or less specific to the individual, which Rosenow has shown to occur with many types of bacteria. Surgical experience in the removal of localized tuberculous deposits gives some stability to this opinion.

The facts in relation to spirochetal involvement of the lymphatics are less easy to ascertain, but evidence shows that the lymph nodes in a high percentage of cases fail permanently to check the progress of the disease. There is much evidence to the effect that the glands may act as secondary foci in the distribution of spirochetes, while the defense reaction developed by their presence in the lymph nodes is to a considerable extent protective against the action of remedial agents. We know that in the spleen, which is a lymphoid organ, spirochetes are protected against remedial agents under certain conditions, that an arrest in progressive syphilis and remarkable improvement in the coincident anemia follow the removal of the spleen if greatly enlarged, and that in such cases spirochetes are to be found in the spleen.

The central nervous system has no lymphatics. The blood vessels do not come into direct contact with the nerve cells, which are insulated by the neuroglia. While from 80 to 85 per cent. of patients with neurosyphilis will be remarkably improved by treatment, permanent arrest of the disease occurs possibly in not more than 50 per cent. Contrast this percentage with the 90 per cent. of permanent arrest of syphilis of the soft parts in which the blood comes in contact with the involved tissues, carrying with it remedial agents destructive to the spirochete. Earlier diagnosis and treatment, because of visibility of the lesions, undoubtedly play an important part in producing the results.

Rosenow's observations and experiments showing the specificity of organisms in relation to their secondary effects apply in syphilis. Fifteen varieties of spirochetes have been shown experimentally, each of which appears to have individual characteristics, which can be shown in the living animal as well as in the test tube.

It is remarkable that in cancer the secondary process is always a transplant from the original, and reproduces

in its new location the cellular morphology of its origin. From various investigations, particularly those of Sistrunk and Bloodgood, made to determine the ultimate results following operation for carcinoma, it can be said that the curability of cancer, following operation for growths susceptible of local removal, depends more on the glandular involvement than on any one factor. It would be conservative to say that two thirds of all cases of removable cancers in which there is no glandular involvement will remain cured, and death will result in only one third because of subsequent local extension or blood transmission. One may even say that the prospects of cure of cancer, other things being equal, depend more on the lymphatic richness of the part affected than on any other one factor. In from 80 to 85 per cent. of cases of cancer of the body of the uterus, which is poor in lymphatics, hysterectomy results in five-year cures, but in cancer of the cervix, with its rich lymphatic supply, in only 25 per cent. Because of the sparseness of the lymphatics, 50 per cent. of five-year cures follow operations in cases of cancer of the large intestine. Incurability in carcinoma of the colon is more often due to secondaries in the liver from emboli broken off from cancer-infected venous thrombi than from carcinoma of the glands. In carcinoma of the stomach, with its rich supply of lymphatics, there is 25 per cent. curability following radical operation.

The lymphatics are a system of absorbents. Twenty years ago, Charles H. Mayo emphasized the fact that the lymphatics reached the height of their activity in adolescence, and, like the tonsils, the spleen, and other lymphoid structures, slowly retrogress, thus explaining the relative curability, decade by decade, of carcinoma in the aged, as contrasted with the rapid growth of malignant disease in the young.

The toxic agents are commonly distributed in three ways; through the blood, which is exceedingly rapid; through the lymphatics, which is slower, and by local extension from a pathologic lesion.

The blood is the agent which carries life-sustaining substances to the tissues. The walls of the capillaries are normally pervious to oxygen and crystalloid substances soluble in water, such as glucose sugar and the amino-acids, which are diffused through the arterial part of the capillary walls, and waste products of combustion in the tissues are diffused back into the venous part of the capillaries. Diffusion depends largely on pressure. The arterial part of the capillary has greater pressure than the tissues, and the tissues greater pressure than the venous part. The point should be emphasized that normally the blood capillaries pick up only molecular substances or extremely fine subdivisions, soluble in water, below the colloid dimensions. The blood capillaries, except in the gastro-intestinal tract and liver (portal system), are not normally pervious to colloidal substances, but these larger particles are taken up by the endothelial cells which act as phagocytes, and by ameboid movements carry them into the lymphatics. It is true that in pathologic conditions, as shown by Krogh in his studies of the toxic effects of histamin on the blood capillaries, such extreme dilatation may render the capillary wall pervious to larger substances and permit the escape of colloids of the blood plasma into the tissues, with stasis and agglutination of the red cells, a condition of shock in which the animal will, so to speak, bleed to death in its own tissues. Generally, it is the function of the lymphatics as absorbents to pick up material substances insoluble in water, such as bacteria, protozoa and the cancer cell, which are too large to enter the blood capillaries. This absorption is through the agency of phagocytes, which by diapedesis reach the lymphatics. The reactions in the lymph nodes represent the struggle of the gland to detoxicate these pathologic agents. The lymphatic channels lead from one gland to another, but in each gland they break up into lymphatic capillaries varying from a micron to 1 mm., and into endothelium-lined pockets and sinusoids before they are gathered again into the larger lymphatic channels for onward movement. So far as the bacillus of tuberculosis, the spirochete and the cancer cell are concerned, the process is one of involvement of gland after gland, with eventual escape of the pathologic agents into the venous system through the subclavian veins. New leukocytes formed in the lymphatic system may act as carriers of the specific agents.

There are two theories with regard to lymphatic vessels: one, that the lymphatics communicate directly with the tissue spaces, the ancient view as against the second and modern view of MacCallum that the lymphatics represent a closed system lined by a single layer of endothelial cells. There is still discussion, however, as to whether the fluid in the lymphatic channels is tissue fluid, or whether there is a difference, not yet recognized. The lymphatics are thought to originate from the venous system; this theory is apparently confirmed by the excellent work of Sabin, Lewis and others.

It is an interesting and perhaps not wholly unprofitable digression to direct attention to the fact that in invertebrates the blood is white or colorless. In vertebrates, with the exception of the amphioxus, the blood is red, and in mammals, has established characteristics. The first blood of the fetus is white. Is it possible that the lymphatics are the primary system, and the vascular circulation the secondary? Leukemia is a reversion to the most primitive type of blood, and might well be called the cancer of the white cell, just as pernicious anemia has been picturesquely designated the cancer of the red cell.

There are no lymphatics in the liver other than in the portal connective tissue spaces. The star-shaped cells of Kupffer are endothelial cells, with phagocytic properties, lining the blood channels and sinuses of the liver. There is very little evidence to show that Kupffer's cells differ in function from similar phagocytic endothelial cells which line the blood sinuses in the spleen, lymph nodes and other organs.

The voluntary muscles have no lymphatics inside the connective tissue spaces of the muscle sheaths, which accounts for their remarkable resistance to infection.

The lack of lymphatics in the central nervous system is well illustrated by the slow absorption of hemorrhagic exudates, and the latency of abscess of the brain.

There is as yet no direct evidence to show that new lymphatic glands can form. It is equally true that there is no direct evidence to show that they do not form. The main lymphatic trunks usually accompany the blood vessels, and lymph glands interrupt their courses in certain situations. The position of the large lymph glands is obvious, but smaller glands exist and may be numerous, sometimes microscopic in size, and often infiltrated with adipose tissue for which they may be readily mistaken. In the arrest of solid objects they play the same part as the larger glands; Stiles has established their importance in the arrest of cancer

cells. Hyperplasia of these minute glands may lead to the belief that they are new formations. Hemal lymph nodes are believed by Meyer not to be true lymph nodes; they appear normally in certain of the lower animals, but are seldom seen in man, unless perhaps in accessory spleens. The pelvis has few lymphatics, and is relatively immune to infections as contrasted with the under surface of the diaphragm, which has many lymphatics with apertures of such size that microscopic carmin particles have been seen to enter them and pass through into the thoracic glands. Herring and MacNaughton, in a splendid research, conclude that the lymphatics are probably not so numerous as is often believed, and that they are almost always confined to the true connective tissues. They have shown that the lymphatics are concerned with the absorption of solids and material insoluble in water, while the blood capillaries are mainly associated with the absorption of material which is soluble in water. The fact that the lymphatic vessels are supplied with valves which prevent back-flowing and incompetence of these valves, or interruption of the lymph current from various other causes, is important in connection with the etiology of various forms of lymphedema.

The influence of secondary septic infection on the lymphatic manifestations of tuberculosis, syphilis and carcinoma can hardly be overestimated. The tuberculous patient seldom dies from tuberculosis unless the infectious products are confined, producing injurious pressure, as on the brain; death results rather from the associated sepsis. If septic complications of tuberculous processes exist which are removable, the prospect of cure or improvement is greatly enhanced. It is very important that all foci of infection in the tonsils, teeth, and so forth, be eradicated in the tuberculous patient. Growing experience in the treatment of tuberculosis teaches that the glandular manifestations of tuberculosis may be and often are successfully combated spontaneously by encapsulation of the bacilli of tuberculosis and their destruction within the lymph nodes. It is largely a question of individual resistance. A high percentage of general postmortems reveal tuberculous lymphatic glands, many of which have been successful in sterilizing the contained bacilli.

In syphilis the prospect of successful lymphatic defense is not good, and some spirochetes escape from the lymphatic glands into the circulation. Undoubtedly more or less individual immunity to syphilis exists, but permanent arrest of syphilis depends largely on specific medication, such as arsphenamin and mercury, rather than on spontaneously produced immunization. The removal of foci of infection or septic complications of syphilitic infection has been shown to have a great influence in aiding the arrest of the disease by appropriate treatment.

In cancer, the prospect of successful glandular defense against the extension of the disease is exceedingly small. There is reason to believe that a certain immunity to cancer does exist in individual cases. On several occasions I have been unable satisfactorily to remove the entire growth, and yet the patient made a recovery lasting for three or more years. The records of certain necropsy findings after deaths from operation have shown interesting data, especially with regard to the lungs. Areas of carcinoma too small to be shown in the roentgenogram were represented by little nodes of fibrous tissue containing a few cancer cells; other little areas in the vicinity were quite similar in appearance, but contained no cancer cells in the cicatricial mass. While this would by no means prove that the defense as a whole is successful, it does show that a mechanism of defense exists, and that roentgen ray and radium in addition to sterilization of the cell nuclei act in much the same way, developing masses of scar tissue which cut off the blood supply and obliterate the contained cells. The cancer cell left to itself eventually destroys its host, unlike the bacillus of tuberculosis and the spirochete, which can live only on the living; hence invariable destruction of their hosts would mean eventual extinction of the infecting organisms.

Clinical and pathologic experience teaches that cancerous involvement of glands means incurability of the disease in a large majority of cases. It is true that glandular defense may be efficient for a prolonged period, but ultimate cure is confined to only a small group of cases when the lymphatics are involved in the cancerous process.

Investigation of the results following operations on patients who had come to the clinic with cancer of the rectum with involvement of the glands showed that in Group 4, in which all the regional glands were involved, there was only one five-year cure in spite of the removal of all the involved glands that could be detected. It is extremely important, in operating in cases of early cancer, that all the gland-bearing tissue should be most carefully removed. Here is the chance to remove the disease, and if there is glandular involvement to dissect beyond it. However, terrific operations as a routine procedure, when the glands are extensively involved, may not give added security against the return of the disease sufficient to warrant the increase in the operative mortality; each case must be judged on its merits. Experience has taught us the advisibility of removing the primary source of the disease wherever possible, whether or not all of the involved lymph nodes can be extirpated, especially if the disease is situated in a septic region, such as the stomach, intestines and rectum. A palliative resection, even if all the enlarged glands cannot be removed, will often add three years or more of comfortable existence. The individual may return to his daily duties, and die after a comparatively short and painless illness from internal metastasis. We have had patients for whom palliative resection of the stomach was performed without removal of all the infected glands, who lived for three or more years in comfort and apparent health. The same has occurred in cases in which the liver contained metastatic cancerous nodules. Palliative operations which remove the primary source of the disease may permit nature's defense to exert its full strength on the glandular and other secondary lesions.

CONCLUSION

I wish particularly to direct attention to the fact that not all enlarged glands associated with cancer, especially in septic situations, such as the gastro-intestinal tract, are due to cancer. The glands may enlarge if a benign lesion, such as a chronic ulcer, precedes the cancerous change. Chronic sepsis involving the glands is not infrequent; the glands may become so extremely hard as to appear malignant. This condition is quite constant in cancer of the large intestine. Postmortems show that half the patients who die from cancer of the colon have no cancerous involvement of the lymphatic glands at the time of death, although the glands may be greatly enlarged from sepsis. I mention this because I have operated on many patients whose condition after

exploration has been pronounced inoperable on account of glandular involvement, and I have been able to resect and definitely to show that the glands were septic, not cancerous. These patients have remained well for long periods. Microscopic examination of the glands will be necessary in many cases to decide the question.

AFTER-CARE OF INFANTILE PARALYSIS CASES OF THE 1916 EPIDEMIC IN BROOKLYN

A DETAILED REPORT OF ABOUT THREE HUNDRED CASES FOLLOWED THROUGH FIVE YEARS

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INTRODUCTION

When an epidemic attacks more than five thousand children and young adults in a community in a few summer months, with a mortality of about 25 per cent. and with an expectation of more or less crippling of the remaining three fourths, it is a matter of general interest to the community at large as well as of special interest to the medical profession. The first interest is centered around measures to prevent the spread of the disease in the community. No less important is the immediate and follow-up care of those stricken. But a community does not do its full duty if it neglects to collect pertinent facts concerning such a scourge, and to publish them in the hope that from such data useful information may be available. This is a report of the repeated examination of 297 chosen patients, from the thousands stricken with infantile paralysis in Brooklyn, in the summer of 1916, and followed through five years. From the manner in which they were selected it is believed that they typify, and the findings are practically those of the entire group stricken and surviving the initial mortality.

At first everybody was so busy creating or enlarging the facilities for caring for the many children that had been left crippled that little attention was given to making examinations and records that might have scientific value as to the progress and recovery of the children. Soon, however, the Brooklyn Committee for Crippled Children made plans for such a record. An elaborate form was prepared by a special committee of orthopedic surgeons and neurologists, which included Dr. Walter Truslow, Dr. Jacques C. Rushmore, Dr. William Browning and Dr. Frederick C. Tilney. This form of record was put in the hands of the orthopedic surgeons at the three largest orthopedic dispensaries in Brooklyn, and it was arranged that 100 children should be chosen from each of the three, who should be examined every six months with great care for several years. This record was intended to show in detail the initial condition and the history of the case under the several forms of treatment.

Unfortunately, the war called away some of the orthopedic surgeons, and the examinations were not carried out as thoroughly as had been hoped. Moreover, the original plan of having three different surgeons or groups of surgeons making the records gave a variety of findings from which it was not possible to eliminate entirely the personal equation. However, the reexaminations were centered in the hands of Dr. Horace G. Dunham, who completed them and prepared the report. It is rather remarkable that 297 out of the initial 300 are reported on in his statistics. Not all of them were examined at the later dates, but the basis for his findings has probably been excelled in few instances, if any.

Although the burden of after-care and the responsibility for this special report rested at the first with the Committee for Cripples of the Brooklyn Bureau of Charities, material assistance has been rendered by the Brooklyn orthopedic hospitals and dispensaries and the Visiting Nurse Association and the Children's Aid Society in carrying on the work and the study.

THE REPORT

While Medin was the first to demonstrate the occurrence of acute anterior poliomyelitis (infantile paralysis) in epidemic form, he included only such patients as had been paralyzed. It remained for his associate Wickman to call attention to the nonparalytic or abortive forms, and to emphasize the fact that these patients might be influential distributors of the disease.

Since time has shown that the disease is very common and that probably a large proportion of the population at some time in their life history has been afflicted by the abortive or nonparalytic form, particularly in very early life, it is easily conceivable that a certain number of obscure conditions of the central nervous system may have at least been initiated by adhesions and obstructions resulting from such an attack, unnoticed at the time of onset because no clinical signs and symptoms were present. This is especially applicable to various types of hydrocephalus which can be induced by slight pathologic change along the various channels from the lateral ventricles of the brain to the subarachnoid spaces.

The origin of the American epidemics during the last two decades is somewhat in question. It was thought by one group that the 1907 epidemic followed the influx of a large number of Scandinavians only two years after the epidemic in Norway and Sweden. This theory, however, would seem to need further proof before its acceptance, since the distribution of the poliomyelitis epidemic of 1907 in the Middle West did not closely correspond geographically with the distribution of the newly arrived Scandinavians. In Norway, a small epidemic was recorded in 1868, while in Sweden, the first one noted was 1881. From that time the epidemics have become more frequent and of greater dimensions up to the great epidemic in Scandinavia in 1905. Since that time epidemics in varying degrees of severity have been reported throughout Europe, the United States, the West Indies, South America, Australia and the South Sea Islands. In certain parts of Europe the disease is endemic. It is only since 1905 that much attention has been paid to this disease by boards of health, and particularly by the daily press.

It is most significant that one writer states that the majority of the nonparalytic cases at present escape recognition, as well as a large number of those resulting in definite paralysis. Furthermore, the New York epidemic of 1907 was practically ignored until after the acute stage was past and until the residual defects of a large series of cases came to the attention of dispensaries and of neurologists, pediatricians and orthopedic surgeons, thus leading to an investigation of the cause.

Sinkler pointed out the seasonal relation to the disease, and states that 78.8 per cent. occurred from May to September. This is the experience of most observers in most of the epidemics, which does not preclude its appearance in any month of the year, the lowest incidence being in the colder seasons of winter and early spring. Transmission may take place by direct contact, carriers, dust, infected clothing and other material or intimate contact with the patient, and by foodstuffs, insects or domestic animals. There seems to exist no doubt at the present time regarding the transmissibility by direct contact. In fact, this has been demonstrated in a practical way by inducing the disease in monkeys with virus obtained from the secretions of the nose and throat of man showing the clinical phenomena, as well as of those individuals who have been in direct contact with the disease but who have manifested no clinical signs or symptoms. In this series, the number of children in a family with only one person ill ranged from one to eight, the average being three children to each family so affected. There were fourteen families in which more than one child in the same family were paralyzed. The reason even greater numbers are not affected during epidemics may be explained, and at some future time demonstrated, on the basis of a natural immunity to this particular virus, just as the Schick test for diphtheria susceptibility has given us similar data; and, in addition, a large number of "contacts," both direct and indirect, very reasonably may acquire an immunity without the acute upset and residual paralyses.

A point of interest brought out by the investigations of the 1916 epidemic was that most of the cases occurred on the first and second floors of the taller houses. This is contrary to conditions found during scarlet fever and diphtheria outbreaks, which show a higher percentage on the upper floors. It suggests a point in favor of the transmission by rat fleas in the case of poliomyelitis, the lower, relatively darker quarters favoring the abode of rodents and insects.

Another important observation made during the 1916 epidemic, while not conclusive, is strongly suggestive. It was found that a large number of children with poliomyelitis had a diseased condition of the nose or throat, and sometimes a combination of both, affecting tonsils and adenoid tissue. Of special significance is the observation that only a small group of patients previously operated on for tonsil and adenoid conditions contracted the disease, and in the patients operated on in whom it did develop, the percentage of recoveries was very much higher than in those who had not been subjected to operation. The disease is one that essentially confers immunity after the attack; the duration of the immunity is, of course, not known. A few instances are recorded in which a child apparently had recovered from an attack of infantile paralysis, and after a long interval experienced a recurrence with increased paralysis. Two such cases are recorded in the New York epidemic of 1916, but not one is included in this series of 297 patients. However, the immunity produced by one attack seems to be almost perfect, and the instances of recurrence are so rare as to be classed with the curiosities.

Certain interesting facts are found in the records of the New York State Department of Health, concerning the 1916 epidemic, which was the most extensive recorded. From June to December, 1916, there were, in the state, 13,000 cases and 3,300 deaths. It began in Brooklyn in April, 1916, and at first spread slowly and later more rapidly to every part of the state. More than two thirds of the entire number, or 8,991 cases, were in New York City. The mortality rate was approximately 25 per cent., a higher figure than that found in any previous large epidemic. While absolutely by far the greater number of patients were in New York City, the relative percentage was much higher in the rural communities, which averaged 2.4 per cent. per thousand, while New York City showed 1.6 per cent. per thousand. In the other cities of the state the average was 0.6 per thousand.

In the first 7,500 cases in New York City, nearly 80 per cent. were among children under 5 years of age, while in other parts of the state less than two thirds of the patients were under 5 years.

After much careful study, it was determined that persons with the disease were a source of active infection at least eight days after the acute onset, and there was little evidence that the disease was contracted from a person ill more than two weeks. For this reason the proper isolation period suggested for suspected cases in the future is two weeks. It is thought that the virus is carried to the different parts of the body by the lymphatic system, and, contrary to the older studies, the disease at present must be considered a general and not a local infection, but shows a tendency to localize in the nerve and lymphoid system.

PATHOLOGY

Naturally, in a disease such as poliomyelitis, in which a wide variation in degree of damage takes place, from the abortive, nonparalytic, to that causing early death, one must of necessity find great divergence in the extent of the pathologic changes.

The pressure of the cerebrospinal fluid is usually moderately increased, and presents abnormal characteristics. It is sterile and usually clear, but in exceptional cases may be cloudy or bloody. The number of cells is increased from twenty to 100, and in some cases even as high as 500 per cubic millimeter. The polymorphonuclear is the chief type of cell encountered in the earlier stages of the disease and preceding the paralytic period, and sometimes they comprise 80 or 90 per cent. of cells counted at this time. After paralysis is established, the mononuclear lymphocyte predominates in numbers ranging from 75 to 100 per cent. There are sometimes other less conspicuous cells, such as the endothelial type of large mononuclear cell, and the phagocytic cell. All of these types of cells rapidly disappear from the fluid, the count being normal or approximately so, at the end of a fortnight after the acute onset.

Like the normal fluid, it gives a positive Fehling's reaction and usually gives a reaction for globulin, but less marked than that obtained in the various forms of meningitis. The early changes show asymmetric congestion of the blood vessels of the meninges, brain and spinal cord, and with the congestion, an exudate of small, round cells in the perivascular lymph spaces of the leptomeninges. The most highly vascular areas of the cord present the most marked changes in the cervical and lumbar regions, and especially the anterior part of the cord, though not exclusively in these areas, as changes varying in degree may occur throughout the entire cord.

With obstruction of the circulation, there is more or less marked edema, and punctate hemorrhages or even larger vascular ruptures may be seen scattered throughout the white and gray substance of the cord.

The fact that a large proportion of these cases show their early paralysis much more marked than months and even years later, is readily understood after study of the pathologic invasion of the affected regions of the cord. Here the virus effects changes of all grades from the severest destruction, gradually shading off in the parts more remote to very slight and scarcely appreciable deviations from the normal structure. In the less severely involved areas, a strong tendency to return to normal is noted, and the temporary inhibition of nerve function due to acute upset is gradually eliminated as recovery is approximated; consequently, the muscles supplied by the centers involved are in turn able to resume their function in proportion to the restored innervation. These more favorable changes are due largely to absorption of exudate and edema, which cause transient pressure on these tracts, and the more hopeful aspect is impossible at the site of immediate and complete tissue destruction during the acute upheaval. While both motor and sensory portions of the cord are affected, it is well known that the motor side bears the brunt of the damage in this disease.

SYMPTOMS

Even a small experience with infantile paralysis must soon convince one that signs are much more prominent than symptoms. In a multitude of cases the acute onset will be ignored until some form of paralysis demands the attention. The different regions of the central nerve system affected have given rise to certain more or less characteristic types which are responsible for a classification of scientific interest.

The common symptoms of the acute attack are fever, general malaise, sometimes nausea and vomiting, headache, irritability, gastro-intestinal disturbance, and more often constipation than diarrhea. In addition, but less frequently, are observed sometimes coryza, rigidity of the neck, tonsillitis, pharyngitis, muscular twitchings, convulsions and cough. With all this array of manifestations of an acute disturbance, it must be remembered that many children would go to bed apparently well, and next morning be unable to move one or more of their extremities. It is well known that the severity of the onset bears no definite relation to subsequent paralysis, the mildest of the acute attacks being at times followed by extreme and permanent damage to the central nerve system, while on other occasions the converse is true. Fever is the most constant of the acute symptoms and sometimes the only outstanding one, probably explaining why in repeated instances the diagnosis of "teething," "diarrhea," "pneumonia" and other complaints common to childhood has been made prior to the appearance of paralysis. Headache is most commonly associated with the febrile state. In addition, there is frequently pain along the spine and in the legs, and also back of the head and neck. The child's mental state is more likely to be one of drowsiness until disturbed, when it becomes irritable during manipulation, but soon relapses into its former state again.

DIAGNOSIS AND PROPHYLAXIS

It is easily conceivable, when considering the protean nature of poliomyelitis, that sporadic outbreaks would cause obscurity and error in diagnosis; but it is much less to be comprehended that errors should occur so frequently during a great epidemic as the facts seem to indicate from the records of 1916. Presumably, in some instances, the diagnosis of infantile paralysis, in the initial period of an acute upset in a child, was incorrectly made, as the subsequent course and termination of these particular instances demonstrated; but much safer and wiser was it to err in favor of prevention and quarantine than to permit the real infection to be widely scattered under some other guise, simply because the muscle defect had not yet established its true identity.

The most important and far reaching consideration underlying the question of diagnosis is, after all, prophylaxis. The patient with an acute illness suggesting poliomyelitis already has the disease or has not; and while the best methods of treatment at hand will be employed, that particular patient has already developed his illness, and this fact cannot be altered. What can be controlled, however, is the dissemination from that focus to a multitude of other spots within a wide radius, owing to a diagnosis of some benign illness which would not indicate the rigid prophylactic measures imperative in every case of infantile paralysis.

A type of this disease not so important to the patient as to the community is the nonparalytic or abortive form of infantile paralysis. Often, these cases are much more of a menace, because unrecognized, than the paralytic type, which is likely to be correctly diagnosed early, allowing proper preventive measures to become operative immediately. The gravity of this phase of the situation may be realized when no less an authority than Wickman found from 25 to 56 per cent. of nonparalytic cases in the total incidence of the disease; and even so he considered these figures far too low! Naturally, after an epidemic is established, there do not exist the same chances of ignoring the true condition. However, when one appreciates the widespread disaster which may result from dissemination of the nonparalytic poliomyelitis, which may in the next child produce the severest paralysis, the alternative of occasional diagnostic errors in its favor is not to be questioned. That the earliest recognition of this type is of first importance in controlling the spread of the disease needs repeated emphasis. Even when a great epidemic is not holding sway, it is particularly important in acute illnesses in which any obscurity prevails to perform a spinal puncture for complete examination of the cerebrospinal fluid, for by this means sufficient evidence may be brought to light for at least a tentative poliomyelitis, and thereby prevent its further spread from that focus into the community at large.

PROGNOSIS

While there are a number of factors in the prognosis of vital interest to the patient, that of first importance to the vast majority is, What are the possible and probable end-results, and will they seriously handicap from an economic standpoint? Only a very small number of these cripples can afford to disregard the capacity for earning a livelihood, even if they were willing to ignore mentally such a physical condition. In this group the lower extremities invariably expressed a more favorable effort toward restoration of function except in those few instances in which the arms and hands were so slightly affected originally as to return quickly to a practically normal status.

This disease is peculiar in that, with so serious a process, even during its acute stage, one does not have apprehension so much as to life or death as to end-results, after the first force of the storm is over. The great question is, What kind of a wreck will be left, and to what future purpose? This is the most difficult problem to solve. Experience with two large epidemics

in this city has given ample evidence that the initial period of the acute onset offers no features that are infallible as a standard guide in prognosis. The most scrupulous and exacting care must be given each patient. The question of diagnosis involves two essential points: prophylaxis for the community, and the most advanced treatment for all stages of the disease in order to insure the greatest possible function ultimately. At the same time, the early neglected cases should not be ignored. Repeated instances are recorded in which no attention was given until long after deformity was established, and by persistence and regularity in treatment over a long period, much relative improvement was demonstrated.

In a general way, the younger the child, the nearer does restoration of function approximate the normal status. Ordinarily, when complete recovery takes place it is within six weeks, and may be delayed six months, again emphasizing the importance of earliest diagnosis for correct treatment in order to secure the maximum salvage of involved parts. While an attempt was made to test the electrical reactions of these children during repeated examinations, it was highly unsatisfactory in the great majority of the patients. The prerequisite of a perfectly quiet state during this procedure, in order to obtain data of any value, was practically impossible, partly because of ignorance, but chiefly on account of their youthful fear.

GENERAL STATISTICS

This series has seven patients with a practically complete return of function in the upper extremities, and twenty-three with a similar result in the lower extremities. In the 297 patients, the paralysis was first noted from one to twenty-one days after acute onset, the average time being three days. The ages ranged from 8 months to 15 years, averaging for the series 2.8 years. Record as to the month of onset was obtained in 292 instances: three during April, 1916; three in May; forty-one in June; 146 in July; eighty-seven in August, and twelve in September, the peak being reached in midsummer.

TABLE 1.—PARTS OF THE BODY INVOLVED

	Number
Back and abdomen alone	1
Right arm alone	6
Left arm alone	10
Right leg alone	14
Left leg alone	14
Both arms alone	4
Both legs alone	33
Both legs and left arm alone	5
Left arm and left leg alone	1
Left arm and face alone	1
Right arm and face alone	1
Face alone	2
Back and abdomen plus:	
Both arms and both legs	9
Both arms	1
Both legs	120
Both arms and left leg	2
Both legs and right arm	11
Both legs and left arm	4
Right arm	9
Both legs, right arm and face	1
Left arm	6
Right leg	24
Left leg	15
Left arm and right leg	1
Both legs and face	1
Left arm and face	1

The return of function of the lower extremities with assistance was from one week to one year, or an average of four months; and without assistance, from three days to one year, or an average of four months. While the average is the same in the two groups, it is evident that the less involved, i. e., return of function without need of assistance to get about, showed an earlier tendency to resume normal work than the more extensively injured legs.

The records show that spinal puncture was performed in forty-two different instances. It is quite probable that more were performed, however, and not noted. Two hundred and ninety patients suffered from the spinal type of this disease, five from the bulbopontile, and two from the meningitic.

TABLE 2.—MUSCLE GROUPS INVOLVED

LOWER EXTREMITY	Number
Abductors of thigh	159
Adductors of thigh	168
Flexors of thigh	164
Extensors of thigh	167
Internal rotators of thigh	205
External rotators of thigh	165
Extensors of leg	222
Flexors of leg	209
Extensors of foot and toes	190
Dorsal flexors of foot	191
Tibialis anticus	249
Extensor longus digitorum	195
Extensor longus hallucis	195
Peroneus	208
Plantar flexors, foot and toes	195
Gastrocnemius and solens	225
Tibialis posticus	224
Flexor longus digitorum	195
UPPER EXTREMITY AND TRUNK MUSCLES	
Orbital	5
Facial	7
Masticatory	1
Pharyngeal	1
Laryngeal	1
Cervical flexors	5
Cervical extensors	5
Cervical rotators	5
Erector spinae (thoracic)	175
Erector spinae (lumbar)	174
Serratus magnus	14
Intercostals	2
Rectus abdominalis	153
Lateral abdominal	154
Deltoid	63
Pectoralis major	48
Latissimus dorsi	45
Supraspinatus	45
Infraspinatus	45
Teres major	46
Teres minor	46
Rhomboids	46
Biceps	45
Triceps	46
Pronators of forearm	37
Supinators of forearm	39
Flexors of wrist	38
Extensors of wrist	36
Adductors of thumb	39
Flexors of thumb	40
Extensors of thumb	39
Flexors of fingers	43
Extensors of fingers	42
Abductors of fingers	39
Adductors of fingers	39

These reflexes were elicited months, and in many instances a year or longer, after the acute onset.

Coldness and cyanosis were evident in most of the cases in varying degrees; the greater the paralysis, the more pronounced were these changes. There were none with breaking down of soft parts and ulceration, although a few children, constantly flat on a Bradford frame, had at times a papulovesicular eruption which would recur at intervals. These conditions, although partly attributable to a loss of motion in the affected regions, are primarily a consequence of involvement of the vasomotor system in the paralyzed parts of the body. That so few trophic skin lesions were present in this series is probably due to the fact that treatment was persistent, either at home, in the clinic, or in combination. The electricity, muscle training, exercises and massage—especially the latter—certainly improve the general circulation and vascular tone. It is also known that new paths of conduction for nerve impulses may be developed to replace those destroyed, and that certain

definite exercises are influential in stimulating these new pathways.

For the entire series of examinations the records show certain measurements, as recorded in Table 4.

A glance at these figures shows that increase in atrophy far exceeds the number of those decreasing over an equal period of time. This might create a false impression of relative values unless one understands

TABLE 3.—REFLEXES ABSENT

	Number
Pectoral	2
Biceps	21
Triceps	25
Wrist	20
Radial	13
Ulnar	14
Patellar	179
Achilles	222
Plantar flexors	112

that atrophy and function have no direct bearing on each other; that is, a high grade of atrophy may still give in that member an excellent degree of function far excelling that in an affected extremity of comparatively slight atrophy. There is also a class in each muscle group which shows no change between first and last examinations; that is, there was a certain amount of wasting on the initial examination, which remained the same at the last test, which I am convinced indicates the value of treatment in maintaining that standard. The patients who showed increasing atrophy during regular treatment were those more profoundly involved; and here again, I feel that proper attention in these cases greatly modified the results. In the

TABLE 4.—MEASUREMENTS

	Number	Percentage
UPPER EXTREMITIES		
No shortening	11	16⅔
Decrease in shortening	22	33⅓
Increase in shortening	29	45½
No change between first and last examination	4	6⅔
CIRCUMFERENCE OF UPPER ARM		
No atrophy	1	2
Decrease in atrophy	10	20
Increase in atrophy	30	60
No change between first and last examination	9	18
CIRCUMFERENCE OF FOREARM		
No atrophy	0	0
Decrease in atrophy	26	31¼
Increase in atrophy	42	51⅙
No change between first and last examination	14	17
LOWER EXTREMITIES		
No shortening	42	18⅔
Decrease in shortening	41	18⅙
Increase in shortening	127	61
No change between first and last examination	15	6⅔
CIRCUMFERENCE OF THIGH		
No atrophy	1	0.5
Decrease in atrophy	51	23½
Increase in atrophy	146	67½
No change between first and last examination	28	13
CIRCUMFERENCE OF CALF		
No atrophy	3	1⅓
Decrease in atrophy	47	20¾
Increase in atrophy	141	67
No change between first and last examination	36	16⅓

majority of these cases, atrophy is greatly out of proportion to impaired function, which has been distinctly improved in every patient of the series, in varying degrees, excepting about seven.

The various types of deformity encountered and requiring some form of treatment are listed in Table 5.

TREATMENT

While treatment of the acute stage of illness is not the primary concern of this review, which considers children suffering with varying degrees of paralysis and with a tendency toward as well as established deformity, it may be of some interest to note certain procedures which our records indicate were carried out during the early days of illness. Serum was administered to eleven patients, and intraspinal injections of epinephrin to three. Of 290 of the total number examined (297), the records indicate that 121 were treated at home during the acute illness, and 169 in hospitals.

The after-treatment, in its many phases, bears directly on this series. In the convalescent and chronic stage, treatment was carried out through orthopedic clinics. Therefore, in every case the advantage of any form of special treatment was advised by the chief in this branch of surgery before it was carried into practice. One of the essential purposes in effecting early treatment, that of preventing deformity which follows contraction of the muscles, and which can in a large majority of instances be prevented, was not possible of fullest realization even in these special clinics, because many did not get adequate care until after the damage had in a measure been established.

Hydrotherapy was very generally advised for all these patients, and by the majority was faithfully carried out.

TABLE 5.—TYPES OF DEFORMITY REQUIRING TREATMENT

	Number
"C" curve to left of spine	17
"C" curve to right of spine	14
Left dorsal, right lumbar curve of spine	19
Right dorsal, left lumbar curve of spine	23
Posterior curve of spine	17
Scoliosis	1
Lordosis	13
Abdominal protrusion	98
Flat foot	42
Foot drop	16
Hammer toe	13
Varus	18
Valgus	78
Equinus	5
Equinovarus	33
Equinovalgus	90
Calcaneovalgus	28
Backward curvation of knee	55
Subluxation of shoulder	42
Total	619

When possible, the child was taught to exercise the affected muscles while in warm water, which was an advantage, the extremities being lighter in water than in the air. Massage, muscle training and electricity were advised for practically all of these patients. The number taking advantage of these measures and the regularity with which they were followed varied, as must always be the case with clinic patients and different types of human nature; but it is well within conservative limits to state that all of them had massage and muscle training exercises; a majority regularly; and many included electricity, which, however, was not given in all instances. The electrical treatment was more difficult to give, because that meant a trip to the clinic, which was prohibitive to many of these mothers with large families and no responsible substitute; but massage and muscle training could be and was carried to them by the visiting nurses. In the clinic this form of treatment was given by skilled masseuses. In any form of treatment the best results are to be expected from trained operators; but when this was found impossible owing to lack of numbers, the mothers were instructed, and many times proved to be intelligent and able cooperators after a little training by the visiting nurse.

Lovett and Martin, in a series of cases, concluded that the chances for improvement with expert daily

treatment were 6:1; with supervised home exercises, 3.5:1; and without supervision it was 2.8:1. They also studied forty-four totally paralyzed muscle groups after the lapse of one year. In 48 per cent of these after two months' training, there was a certain amount of demonstrable power developed, while in a similar number of the same kind of cases with no treatment, a return of power was observed in only 27 per cent. This would seem to be significant in emphasizing the great value of expert treatment for the maximum return of power, even though a certain number of less gravely affected patients may show some improvement when neglected.

The massage has a twofold advantage in that it stimulates nutrition by the exercise, and induces an increased flow of blood and lymph to the paralyzed parts, thus aiding in the more rapid and complete elimination of waste products. A mild sinusoidal current was used for those children receiving electrical treatment. The muscle training exercises were those best adapted to the needs of the involved group in the individual case and found to give the best results.

A vital need for many of this group was attention by the orthopedic surgeon to adjust braces and splints as the indication demanded. One can readily understand how great would be the need for some kind of support for the weakened muscles in order to prevent deformity, to prevent contracture of nonparalyzed muscles, and to prevent overstretching of the partially paralyzed group. By performing these functions when properly applied, apparatus aids directly in the recovery from paralysis. The three different orthopedic clinics meeting the demands of these 297 patients applied braces in 153 instances; Bradford frames, in 48; plaster casts, in 145; plaster jackets, in 20; abdominal binders, in 32; splints, in 44; shoes raised, in 74; foot strapped, in 47 cases; foot plates, in 3; and only one pateint had crutches adjusted in this series.

Operative procedures[1] were resorted to sixty-six different times on fifty-nine different patients: astragalectomy, 7; tendon lengthening, 8; muscle stretching, 18; subperiosteal separation, 8; tenotomy, 10; loop operation, 7; tarsectomy, 2; Gallie operation, 3; arthrodesis, 1; Hoke operation, 2.

It has been impossible to secure complete information relative to the patients operated on. Concerning twenty of the fifty-nine different patients, I am advised that two show much improvement, fourteen some improvement, three slight improvement, and one a poor result. It is too soon, however, to value end-results.

I am advised that there are at present 136 of the 297 patients receiving treatment, fifty of these being on the home treatment list. Of the remainder, six have died, thirty-four have moved away, thirty-five cannot be located, and the remainder are not receiving treatment of any kind. Experience would seem to prohibit any absolute and infallible time limit when one can say that the last vestige of improvement in a muscle group has been attained. It has been repeatedly demonstrated over periods of from five to seven years under adequate supervision, and response has been stimulated in neglected cases after the same number of years and even a longer stretch. Hence the main guide would seem to be regular, consistent treatment under expert supervision from the onset until one's judgment in each individual patient indicates that the maximum result has been reached.

1. The number of operations has greatly increased since this report was closed.

It has many times been emphasized that improper treatment may produce greater damage than neglect. Atrophy may result in muscles from overexertion as well as from insufficient exercise. Caution in exercise, massage and electricity has proved more beneficial than pushing to the point of fatigue. Lovett's spring balance test is one of the excellent measures especially designed to meet this problem and prevent overtaxing the involved muscle group.

Prevention is, after all, the only positive means of an absolute cure. Such a statement may seem perfunctory, and the interval of a decade between great epidemics tends to lull one into a sense of security; but a brief glance at the past history of this blighting malady should arouse permanent interest and activity toward constant vigilance for the future. The records show these figures: New York City, 1907, 2,500 cases; Nebraska, March to December, 1909, 1,037 cases; Pennsylvania, summer, 1910, 1,076 cases; Minnesota, summer, 1910, 1,000 cases; United States as a whole, 1910, 14,590 cases; New York City, July to November, 1912, 1,108 cases.

The foregoing figures show only those epidemics including 1,000 cases or more in this country. Let it be remembered that there remain other invasions both at home and abroad, of startling proportions: Sweden, July to September, 1905, 1,030 cases; October to December, 1911, 3,840 cases; Norway, summer, 1911, 1,250 cases. Furthermore, from the time of its earliest record in the country when the ten cases in Louisiana, in the summer of 1841, were compiled, there have been, in addition to those already noted at short intervals of two or three years, outbreaks in different sections of this country ranging from ten to 923, the latter figure representing the Massachusetts outbreak in the summer of 1909.

These figures of past history surely seem worthy of serious deliberation for future policy toward a disease that visits us practically every season to some degree. It is easy to settle into a state of false security after a great menace has passed by, but what assurance is there that another is not close at hand?

The most decisive victory when biologic poisons are at work is to prevent invasion.

SUMMARY

This group of patients did not come under the same supervision from the acute onset up to the present time. Our experience with them dates from one to two years after the initial period of their illness, therefore giving a great variety of physical defect, depending on the severity of the attack, the type of early treatment in each instance, and the intelligence of the parents in cooperating with the physician.

The histories of this group indicate that only fourteen families had more than one child ill with this disease at the same time, which would strongly suggest that its contagion is not transmitted by methods obtaining in our common infectious diseases, such as diphtheria and scarlet fever, particularly since the vast majority of all the other cases were in families with two or more children in the same household. Other factors are dominant in its transmissibility, of which we to date have speculated much and to little practical purpose.

One great lesson should by this time have been learned. Particularly during an epidemic of infantile paralysis of any size, children with obscure indispositions should be kept at rest in bed for several days

until the exact nature of their condition can be determined. One can err only on the right side in giving the patient with this disease every chance for the best recovery. When paralysis supervenes, it usually appears within a very short time after the initial upset, the average for this series being three days after the first manifestation of illness; but often the paralysis comes on twenty-four or forty-eight hours after, so that the patient with a malaise of no consequence need not be incapacitated over a long period of expectancy.

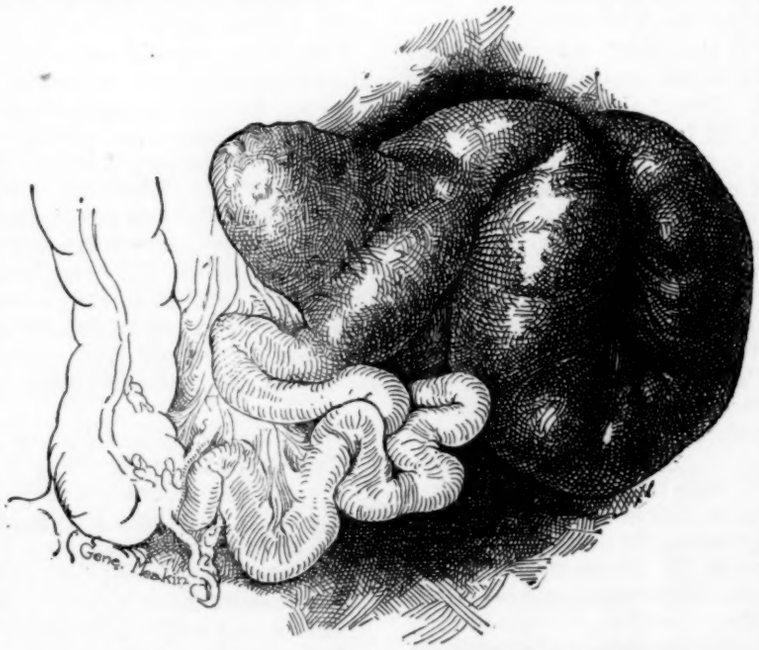
Early, neglected patients should never be ignored in treatment later, regardless of the degree of involvement. Repeated examples are a matter of record in which no treatment was given until long after deformity was established, and by persistence and regularity over a sufficient period, much relative improvement has been accomplished.

It is essentially a disease of childhood, the average age of this series being 2.8 years; therefore in every obscure, acute illness the diagnosis of infantile paralysis should always be a mental reservation, since sporadic cases occur in the community every year.

In this series, the back and abdomen with both lower extremities was the combination of involvement by far the most frequently found, indicating the common attack in these regions of the cord. In the lower extremities, the tibialis anticus was most often affected, next in frequency being the calf muscles and tibialis posticus. In the upper extremities, the biceps and triceps head the list. The more severely involved upper extremities did not respond to treatment as rapidly as the equally involved lower extremities, in our series.

While it is known that patients long neglected will show some restoration of function, it has been very definitely established, through practical application, that proper treatment regularly and systematically followed will produce far greater results than no treatment, in the same degree of involvement. Obviously, to obtain the best results and maximum functional return, these patients must have intelligent care from the outset of their illness. Correct treatment for a definite stage applied at the wrong time is far worse than none, just as surely as exercise pushed to the point of fatigue and muscle exhaustion is distinctly harmful.

Those patients have made the greatest progress in return of function who had the least interference during the initial stage of their illness, and when treatment in the subacute and chronic stages was intelligently advised and faithfully carried out. It would seem to us from experience with this series, some coming in the subacute and others in the chronic stage of the disease, that it is just as important for a correct diagnosis and proper treatment in the beginning as at any period, since many subsequent deformities might be avoided entirely if the patient was properly supervised at the outset.



Meckel's diverticulum and proximal loops of bowel distended with fecal material; the terminal ileum and the cecum are collapsed. (From sketch made at operation.)

ACUTE INTESTINAL OBSTRUCTION CAUSED BY FECAL IMPACTION IN MECKEL'S DIVERTICULUM *

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The case here reported is of unusual interest on account of the rarity of the pathologic condition. In a search of the literature we were unable to find any other case in which a fecal impaction starting in a Meckel's diverticulum had resulted in an intestinal obstruction. Numerous cases of intestinal obstruction due to Meckel's diverticulum have been recorded. Halstead,[1] in 1902, quoted Lichtenstern as noting a Meckel's diverticulum to be the cause of intestinal obstruction in 6 per cent. of all cases of acute obstruction. The obstruction in the cases reported has been brought about in various ways. In most cases a loop of bowel has been caught under or over the terminal filament of the diverticulum in much the same way as in the case of a postoperative adhesion. The diverticulum has at times knotted itself about a loop of intestine. Many cases have been reported in which the diverticulum has been the cause of an intussusception. Peritonitis secondary to a diverticulitis has been reported as the cause of an ileus. But we have not been able to find a case on record in which a Meckel's diverticulum had collected sufficient solid material to cause a fecal impaction and obstruction. Fecal impaction in the small intestine, although extremely rare, is not unknown.

REPORT OF CASE

On the night of August 12, 1922, E. B., a 10 year old schoolboy, was brought to the Sarah Morris Hospital (the pediatric pavilion of the Michael Reese Hospital) complaining of abdominal pain. The child had had a mild diarrhea for the preceding week, but had been up and about and otherwise well. Four hours previous to admission to the hospital, he was seized with sharp, severe, generalized, abdominal cramps. Gradually these cramps became localized at a point

* From the Surgical Service of the Sarah Morris Hospital, Michael Reese Hospital.

1. Halstead, A. E.: Ann. Surg. 35: 495, 1902.

just below the umbilicus in the midline. About an hour later the child started to vomit, and had vomited four times before admission. to the hospital. The vomitus at first contained the food eaten at supper; later it contained bile. At no time was the vomitus fecal. The mother had given the child an enema, and had obtained a small liquid stool, but with no relief of symptoms. There was no blood in the stool.

One year previous and again two months previous, the child had had similar attacks, which, however, had cleared up spontaneously in a few hours. Except for measles at the age of 4, the child had always been in excellent health.

On admission to the hospital it was noted that the child looked very ill. His face was drawn; his nose was peaked. He complained of nausea, and wanted to vomit, but was unable to do so. The pain had shifted more to the lower right abdominal quadrant, and was steady in character. He lay quietly in bed with both legs extended.

Physical examination except for his general appearance of being acutely ill, and for the abdomen, revealed no abnormalities bearing upon the case. The abdomen was slightly distended. There was distinct tenderness on light palpation over the lower right abdominal quadrant. Deep palpation anywhere over the abdomen caused pain, which was referred to the lower right quadrant. There was a definite increase in muscle resistance on the right side as compared to the left. The abdomen was everywhere tympanitic. There was no dulness in the flanks. Liver dulness was present. The liver, spleen and kidneys were not palpable. Just to the right of the midline at the level of the umbilicus could be felt a sausage-shaped mass, which seemed to be about 3 inches long. Pressure on this mass caused severe pain. Rectal examination was negative. The temperature was 99 F. (rectal); the pulse, 84; respiration, 22. Blood count revealed a leukocytosis of 14,100.

No definite diagnosis could be made. The probable diagnosis was, first, intussusception, in spite of the absence of bloody stools, and, second, acute appendicitis, the mass palpated being interpreted as the inflamed appendix enveloped in omentum.

The patient was prepared and brought to the operating room. Ether anesthesia was given. The abdomen was opened with a right pararectus incision. Several cubic centimeters of a clear fluid escaped. Coils of distended small intestine appeared. The mass that had previously been noted was easily palpated and delivered into the wound. It was composed of distended small intestine, but its exact nature and its position were at first difficult to recognize. Further exploration revealed the large intestine, cecum and distal ileum collapsed but otherwise normal. The appendix was free, not inflamed and evidently not associated with the present condition. About 8 inches above the ileocecal valve, the ileum abruptly became markedly distended, the intestine was livid, and the serosa was injected. At this point a broad based pouch, evidently a Meckel's diverticulum, protruded from the antemesenteric border of the intestine. The diverticulum and the ileum proximal to it for a distance of about 5 inches were distended by a doughy, semisolid mass, containing numerous small, hard lumps. The intestine above this was distended by gas and fluid. Gentle pressure was made on the diverticulum and the proximal intestine. Suddenly the intestinal contents slipped into the collapsed ileum, followed by a gurgling of gas and fluid. The semisolid contents could be milked along the ileum, through the ileocecal valve and into the large intestine. There had clearly been a fecal impaction, starting probably in the diverticulum, and causing an acute intestinal obstruction. As much of the impacted mass as possible was milked into the large intestine. The intestine almost immediately took on a more healthy appearance as the distention was reduced. Firmly believing that any unnecessary interference is strongly contraindicated in cases of acute intestinal obstruction, we did not make any attempt to obliterate the diverticulum. Furthermore, it was evident that purgation would be desirable in the after-treatment; consequently, we were especially anxious not to injure the intestinal wall.

After partial reduction of the impaction, careful palpation of the intestine gave no evidence of a stenosis, or of any fixed intra-intestinal mass. The abdomen was closed in the usual manner, without drainage. The patient left the operating room in good condition.

In addition to the usual postoperative treatment of simple laparotomy cases, the child was given intramuscular injections of pituitary extract. Colonic flushings were alternated with olive oil retention enemas. Three copious bowel movements were obtained within the first thirty-six hours. The movements were brown and semisolid, and contained many hard masses. No undigested food particles were noted macroscopically. There was no macroscopic blood. The laboratory findings were negative.

The boy made an uneventful recovery, and left the hospital on the thirteenth day. One month later he was called back for physical examination and careful roentgen-ray study of the gastro-intestinal tract. His general physical condition was excellent, and a most careful examination with the fluoroscope and roentgenograms failed to reveal any retention. The diverticulum could not be visualized.

The case leads to many interesting queries and conjectures. Why, in the absence of any macroscopic foreign bodies or undigested food particles, a fecal impaction should occur in the small intestine with apparently no stenosis of its lumen, it is difficult to explain. We surmise that the diverticulum, acting as a reservoir, first became distended, and through pressure on the ileum caused a functional stenosis which gradually led to an impaction. Was it a wise policy to refrain from repairing the diverticulum at the time of operation? It is an open question whether or not it would be wise to reoperate, and obliterate the diverticulum before a fourth attack occurs. The boy at present, however, seems to be in perfect health. The roentgen ray fails to detect any retention, and it seems to us probable that this patient may, in common with many others, go his way unmolested by his Meckel's diverticulum.

SUMMARY

1. The case, an acute intestinal obstruction caused by a fecal impaction starting in a Meckel's diverticulum, is of interest because of its rarity. We were not able to find any similar cases in the literature.

2. A preoperative diagnosis of such a condition could not be made.

3. The uneventful convalescence was due, probably in great part, to the conservative procedure.

Military Training and Health.—President David P. Barrows of the University of California in an address to members of the Association of the Army of the United States said of military training, "The weaknesses of our people were disclosed by the war, by our experience with five million drafted men. In my opinion no educational effort which the national government can make, at least for the male element of the nation, could compare in results with provision for a period of military training for every young man. Even though this period were no longer than six months it would suffice to do three things: to survey our youth physically, correct bodily defects and cure infectious complaints, train in cleanliness and personal hygiene. Six months' experience in camp and in the field would return the youth of our nation to their homes incalculably more robust, more healthful, more disposed to wholesome habits of life. In the second place, military instruction does one indispensable thing for a man's mind—it schools him in the habit of attention, makes him put his mind upon a task and keep it there. It uncovers the intellectual capacity of the nation as nothing else can reveal it, and distinguishes classes of the mentally weak for whom appropriate vocations must patiently be found. In the third place, military training teaches a man that he has duties as well as rights; that he owes his country, if occasion arises, all that he has."

THE BLOOD PRESSURE OF HEALTHY MEN AND WOMEN

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This study is based on the record of risks accepted at standard rates by the Mutual Life Insurance Company of New York for the years 1907 to 1919, inclusive. More than 95 per cent. of the readings were taken by our New York City examiners and our medical referees and their immediate assistants. In the earlier years, no readings were taken except by these examiners, but in the later years a few reports were made by our other examiners in the field. These reports amounted to less than 6 per cent in the year 1919. In the earlier years, most of the readings were obtained by palpation, but since 1915 nearly all of them have been taken by auscultation. The readings were taken while the applicant was seated, and the apparatus was at about the level of his heart. A wide cuff was employed, and in most cases the Tycos manometer.

It is well known that the systolic pressure increases with age and with weight, and also that weight increases with age. In order to reach proper conclusions regarding these three variables, age, weight and pressure, it is necessary to separate each age into weight groups. For convenience, our material has been arranged according to the build groups of the Medico-Actuarial Mortality Investigation.[1] The basis of these groups is the average weight of men for each inch of height at the age of 37. Build Group 0 comprises those within 5 per cent. above and below this standard. Build Group 1 comprises those from 5 to 15 per cent. above the standard; Build Group 2, from 15 to 25 per cent. above the standard; Build Group 3, from 25 to 35 per cent. above; Build Group 4, from 35 to 50 per cent. above, and Build Group 5, those more than 50 per cent. above the standard. Those who are under weight start with Build Group 6, which comprises applicants who are from 5 to 15 per cent. less than the standard. Build Group 7 comprises those who are from 15 to 25 per cent. below standard; Build Group 8, those from 25 to 35 per cent. below, and Build Group 9, those who are more than 35 per cent. below the standard.

Table 1 presents an abridgment of the build groups at the heights 5 feet 4 inches, 5 feet 8 inches, and 6 feet, and indicates the general range of the build groups; the other heights can be interpolated easily.

TABLE 1.—GENERAL RANGE OF BUILD GROUPS

	Build Groups: Weight in Pounds									
Height	9	8	7	6	0	1	2	3	4	5
5 feet 4 inches.....	90 and under	91 to 104	105 to 118	119 to 132	133 to 147	148 to 161	162 to 175	176 to 189	190 to 210	211 and over
5 feet 8 inches.....	101 and under	102 to 116	117 to 132	133 to 148	149 to 164	165 to 180	181 to 196	197 to 211	212 to 235	236 and over
6 feet 0 inches.....	115 and under	116 to 133	134 to 151	152 to 169	170 to 188	189 to 206	207 to 224	225 to 242	243 to 268	269 and over

SYSTOLIC PRESSURE IN MEN

The average systolic pressures among healthy men, when analyzed according to age and build group, are set forth in Table 2. It is based on 150,419 entrants, men only. The largest number entered in the age periods 25 to 29 (27,737) and 30 to 34 (26,892), but even the oldest age period contained 1,889 entrants. The extreme light-weight group (9) and the extreme heavy-weight group (5) contained but few entrants. However, it was easy to extrapolate reasonable values for them at each age.

In reading across the table, it will be noticed that there is an increase of about 10 mm. between the very light-weight group (8) and the very heavy-weight group (4) in each age period. Also, if we read down each build group, it will be noticed that the pressure increases about 11 or 12 mm. between the youngest and the oldest. Nearly all of this increase comes after the age of 40, for 2 mm. will cover the increase up to that age in most of the build groups.

If we take into account all the factors, especially with regard to the youthful applicants who are classified as light weight and those who are markedly over weight, Table 2 is submitted as representing the systolic pressure that may be expected "on the average" for the corresponding age period and build group in reasonably healthy men in the United States and Canada, unless marked leanness or fatness be considered a sign of ill health. The last column, "All Builds" and the last row, "All ages," represent the average of the preceding figures, as if each group contained the same number of entrants. In most tables, the corresponding averages are affected by the fact that the entrants in different groups vary. Thus, the low average of ages 15 to 19 and 20 to 24 usually is due to the fact that three quarters of their entrants are in the lighter build group. In the original basic material, from which this table was prepared, the average for age 15 to 19 was 121.2 mm., and for age 20 to 24, 123.4 mm. After that age, the difference is less than 1 mm.

If we eliminate those risks in Table 2 whose pressure is above 140 mm., we get a curious result. We remove only 8,579, or 5.7 per cent., and still leave 141,840 entrants. The general average for all ages and all builds is reduced only 1.3 mm. The averages for the older age groups and the heavier build groups are all markedly lowered. The difference between the systolic pressure in the youngest age period, 121 mm., and in the oldest age period, 129.8 mm., is only 8.8 mm., instead of 12 mm., as before. The marked increase at age 40 also disappears, or at least is postponed until age 55. The differences between the build groups are not so great as before. The systolic pressure in Build Group 4 is lowered to 127.9 mm., while in Build Group 8 it is lowered only 0.4 mm. Evidently, a great number of the differences in Table 2 are due to the inclusion of blood pressures above 140 mm. But there are only 704 entrants whose pressure is above 150 mm., and only 372 of these whose pressure is above 155 mm. The pressure of practically all of those eliminated lay between 141 and 150 mm., inclusive. The larger averages, therefore, in the older age and in the heavier build groups are due to the inclusion of an increasingly larger number of risks whose blood pressures are not unusually high. There is a temptation to regard any systolic pressure above 140 mm. with suspicion, and Rogers and Hunter[2] make a charge for a systolic

1. Medico-Actuarial Mortality Investigation 1: 120-121, 1912.

2. Rogers and Hunter: Proceedings of the Association of Life Insurance Medical Directors 8: 130, 1921-1922.

pressure of 140 mm. up to and including age 35, according to the system of numerical rating in vogue in the New York Life Insurance Company.

Life insurance has furnished the only large collections of reports on the blood pressure of healthy men. A few articles have appeared on the blood pressure of students,[3] of soldiers,[4] and of some other groups, but the ages have been limited usually to those comparatively young. Four excellent reports have been made from life insurance data. One by Dr. J. W. Fisher[5] was made in 1914. A very extensive report was made by Dr. Mackenzie[6] in 1915. Another report

TABLE 2.—SYSTOLIC PRESSURE FOR MEN

Ages	Build Groups 9	8	7	6	0	1	2	3	4	5	All Builds
From 15-19	114	116	120	122	123	125	126	128	130	131	123.5
20-24	117	119	121	122	123	125	126	128	130	131	124.2
25-29	117	120	121	123	124	125	126	128	130	131	124.5
30-34	118	120	121	123	124	126	127	129	131	132	125.1
35-39	118	121	122	123	124	126	127	129	131	132	125.3
40-44	119	121	123	124	126	127	129	130	132	133	126.4
45-49	121	122	125	126	127	129	131	132	134	135	128.2
50-54	123	124	126	128	130	131	133	134	136	137	130.2
55-59	126	128	129	131	133	134	137	138	139	140	133.5
60 and over	128	129	132	133	135	136	138	139	140	142	135.2
All ages....	120.1	122.0	124.0	125.5	126.9	128.4	130.0	131.5	133.3	134.4	127.6

was made by Rogers and Hunter,[7] on observations taken during 1913 and to 1916. Another excellent report was made by Goepp[8] on cases arising during 1918. For the individual age periods, Fisher's, Mackenzie's, and Hunter and Rogers' averages are quite close to those set forth in Table 2; but Goepp's are a little lower. He noticed this and thus commented on it:[8]

> The thought suggests itself whether the general reduction in the scale of living brought about by war conditions, particularly in the matter of eating and the use of alcohol, may not have had its influences on the averages obtained in the series.

On this hint those risks who were examined at the home office in New York were classified according to years of issue, and the results are set forth in Table 3.

The systolic blood pressure in New York City dropped decidedly in 1917 when we entered the war, and stayed low during 1918 and 1919. It began to rise in 1920, and came back to the prewar level in 1921. In the first five months of this year, it seems to have fallen off a little. In this table, the averages for all ages combined are valuable for comparison, for the age incidence is nearly the same for each year of issue.

The mortality results from this mass of material are not very conclusive. The time that has elapsed since the records were first noted has been so short that the number of deaths in the classes with high pressure or low pressure is very small. Without giving a detailed tabular statement, it may be said that there were 2,906 actual deaths and 3,691.8 expected deaths. This gives a mortality ratio of 79 per cent., and shows excellent selection; for it includes the deaths from influenza and from the war. The lower pressures of 110 mm. and less showed poor results in the younger age groups, 15 to 29, and very good results in the older age groups, 45 and over. From 110 mm. to 145 mm., the results were good except in the younger age groups, 15 to 29, in which they began to be poor above 140 mm. The results were not good at any age when the systolic pressure was above 145 mm. as compared with the general results. A very few applicants were accepted whose systolic pressure was above 160 mm., and presumably care was taken to see that these applicants were very good in other respects. This class showed very poor results, especially among those who were overweight. The combination of a blood pressure over 160 mm. and any excess weight, as set forth in Table 1, makes distinctly for a high mortality.

3. Alvarez, W. C.: Blood Pressure in University Freshmen and Office Patients, Arch. Int. Med. **26**: 381 (Oct.) 1920. Barach, J. H., and Marks, W. L.: Blood-Pressures: Their Relation to Each Other and to Physical Efficiency, ibid. **13**: 648 (April) 1914.
4. Smith, Bertnard: Blood Pressure Studies of Five Hundred Men, J. A. M. A. **71**: 171 (July 20) 1918. Sorapure, V. E.: Lancet **1**: 841 (Dec. 21) 1918.
5. Fisher, J. W.: Diagnostic Value of the Sphygmomanometer in Examinations for Life Insurance, J. A. M. A. **63**: 1752 (Nov. 14) 1914.
6. Mackenzie, L. F.: Proceedings of Association of Life Insurance Medical Directors, 1915, p. 221.
7. Rogers and Hunter: Proceedings of Association of Life Insurance Medical Directors, Thirtieth Annual Meeting **6**: 92, 1919.
8. Goepp, R. M.: Pennsylvania M. J. **22**: 295 (Feb.) 1919.

SYSTOLIC PRESSURE IN WOMEN

The study of systolic pressure in women is based on the women whose blood pressures were reported in the issues of 1907 to 1919, inclusive. The remarks in the opening paragraphs on systolic pressure in men apply equally well here. The total entrants numbered 11,937. Women weigh less than men, and more than 55 per cent. of them are in the lighter weight build groups (6, 7, 8 and 9), while only 40 per cent. of the men are in these groups. The average systolic pressures for women are 1 or 2 mm. less than those for men up to age 40. After 40, the systolic pressures of women are quite equal to those of men, and they may be even 1 or 2 mm. higher.

If we eliminate all the applicants whose systolic pressure is above 140, we get a result similar to that in men. The total number eliminated is only 422, 3.5 per cent., and the average pressure for all is lowered only 0.9 mm. As in the case of men, the older age groups and the heavier build groups show more marked reductions of from 2 to 5 mm., yet these changes are due almost entirely to risks whose pressure is between 141 and 150 mm., inclusive; for there are only thirty-eight women whose pressure is over 150 mm., and only twenty-two of these show a pressure above 155 mm.

TABLE 3.—RESULT OF CLASSIFICATION ACCORDING TO YEARS OF ISSUE

Years of Examination	Number of Entrants	Average Systolic Pressure
1913	827	127.5
1914	973	126.0
1915	832	127.6
1916	829	125.4
1917	934	122.8
1918	883	123.7
1919	1,076	123.9
1920	1,206	125.4
1921	1,338	126.5
1922 to June	580	125.2

As in the case of men, these changes depend on the increasing proportion of risks with a pressure of from 141 to 150 mm. in the older age groups and the heavier build groups, and not on the inclusion in these of risks with an unusually high pressure.

DIASTOLIC PRESSURE IN MEN

The study of diastolic pressure in men is based on the reports made by our examiners in the years 1916 to 1919. Ninety-five per cent. of these reports on diastolic pressure were furnished by our examiners in New York City and our medical referees and their immediate assistants. All of these were trained to take the diastolic pressure at the very end of the fourth phase, practically just before the beginning of silence.

Whether this really shows the pressure in the brachial artery after the pulse wave has passed is open to discussion. It calls for the simplest technic, and is determined more easily and regularly than any other point suggested for the diastolic pressure. It is certainly more easily determined than the end of the third phase as the sounds pass into the fourth phase. In many cases, our examiners at the home office find it difficult to determine this change of sounds, and in some cases the fourth phase is entirely absent; but no one finds it hard to detect the last sound. In some abnormal conditions, especially aortic leakage, the sounds continue

TABLE 4.—DIASTOLIC PRESSURE FOR MEN

	Build Groups										All
Ages	9	8	7	6	0	1	2	3	4	5	Builds
From 15–19	75	76	77	78	79	80	81	82	83	84	79.5
20–24	76	77	78	79	80	81	82	83	84	85	80.5
25–29	77	78	79	80	81	82	83	84	85	86	81.5
30–34	78	79	80	80	81	83	84	85	86	87	82.3
35–39	79	80	81	81	82	84	85	86	87	88	83.3
40–44	79	80	81	82	83	85	86	87	88	89	84.0
45–49	80	81	82	83	84	86	87	87	88	89	84.7
50–54	81	82	83	85	86	87	88	88	89	90	85.9
55–59	82	83	84	86	87	88	89	89	90	90	86.8
60 and over	82	83	85	86	87	88	89	89	90	90	86.9
All ages..	78.9	79.9	81.0	82.0	83.0	84.4	85.4	86.0	87.0	87.8	83.5

to very low readings; but in these cases applicants are unhealthy, have not been accepted as standard risks, and are therefore not included in this study. The amount of pressure over which the fourth phase extends is about 2 to 6 mm., usually. As shown by Mackenzie,[9] this range holds true for 75 per cent. of the cases. In 20 per cent. more, it ranges from 7 to 10 mm. If larger, it is doubtful whether the examiners read the fourth point accurately. A wide cuff was used in all cases, and most of the readings were taken on the Tycos manometer. All of the risks were accepted at standard rates.

The diastolic pressure is affected by weight and age just as is the systolic pressure. Table 4, therefore, showing the average diastolic pressure, is arranged similarly to Table 2, and should be read in connection with Table 1. It is based on the records of 60,733 applicants, all men, examined in the years 1916 to 1919 by first-class, well-trained examiners. Reading across the table, it will be noticed that the diastolic pressure increases about 1 mm. for each build group. Reading down a build group, it increases about 7 or 8 mm. from the youngest to the oldest. In proportion to its size, the range of diastolic pressure, both in build groups and in age periods, is nearly as large as that obtained in a study of the systolic pressure. In the diastolic pressure, there is no indication of the distinct rise in the systolic pressure which begins at the age of 40. On the other hand, the total increase in diastolic pressure is just as great proportionately as the total increase in systolic pressure; for the total diastolic increase is about 8 mm., and this is one tenth of the diastolic average, while the total systolic increase is about 12 or 13 mm., and this also is about one tenth of the systolic average.

If we eliminate from Table 4 all persons whose diastolic pressure is 95 mm. and higher, the results are similar to those obtained in a study of the systolic pressure. Only 4,186 cases, 6.9 per cent., are eliminated, and the general average pressure is lowered only 1.3 mm. The large averages in the older age groups and the heavier build groups are much reduced, so that, in Build Group 0, only 5 mm., and in Build Group 1 only 4 mm. separate the youngest from the oldest. Only 1,308 applicants had a diastolic pressure of 100 mm. and upward, and most of these were just 100 mm. In fact, only 175 had a pressure of 105 mm. and upward. In nearly all of the cases eliminated, therefore, the applicant had a diastolic pressure of from 95 to 100 mm.

9. Mackenzie, L. F.: M. Rec. 97: 1029 (June 19) 1920.

DIASTOLIC PRESSURE IN WOMEN

The study of diastolic pressure in women is based on the women entrants who gave a record of the diastolic pressure in the issues of 1916 to 1919. The introductory paragraph in the study of the diastolic pressure of men applies equally well here. The total entrants numbered 5,276. The average diastolic pressures of women are about 1 mm. less than those of men up to age 40. Then for ten years they are about the same, but at the age of 50 they increase quite rapidly, and afterward they are substantially higher than those for men. However, the entrants beyond age 50 were too few to warrant the assumption that this increase over the diastolic pressure in men is certain. It is strengthened, however, by the rise in woman's systolic pressure over man's systolic pressure at the same ages. Perhaps menstruation is responsible for the lower pressures, systolic and diastolic, among women younger than 40, but it does not seem reasonable to consider the menopause the cause of the higher pressures after the age of 50.

PULSE PRESSURE IN MEN

The study of pulse pressure in men is based in part on the preceding data and in part on examinations made at our home office from 1917 to August, 1922, and includes only risks accepted at standard rates. All of the latter readings were taken by auscultation, the subject being seated, with a mercurial manometer at the level of the heart. The diastolic pressure was recorded at the end of the fourth phase, the last distinct sound.

Table 5 shows the cases arranged according to age and build groups. It should be read in connection with Table 1.

TABLE 5.—PULSE PRESSURE FOR MEN

	Build Groups										All
Ages	9	8	7	6	0	1	2	3	4	5	Builds
From 15–19	39	40	43	44	44	45	45	46	47	47	44.0
20–24	41	42	43	43	43	44	44	45	46	46	43.7
25–29	40	42	42	43	43	43	43	44	45	45	43.0
30–34	40	41	41	43	43	43	43	44	45	45	42.8
35–39	39	41	41	42	42	42	42	43	44	44	42.0
40–44	40	41	42	42	43	42	43	43	44	44	42.4
45–49	41	41	43	43	43	43	44	45	45	46	43.4
50–54	42	42	43	43	44	44	45	46	47	47	44.3
55–59	44	45	45	45	46	46	48	49	49	50	46.7
60 and over	46	46	47	47	48	48	49	50	50	52	48.3
All ages..	41.2	42.1	43.0	43.5	43.9	44.0	44.6	45.5	46.2	46.6	44.1

In studying the pulse pressure, we must always remember that it is not a real measure like the systolic and diastolic pressures, but merely the difference between these two. All of its attributes depend on these two real measures. Thus, the slight decrease from the youngest age period up to age 40 is due to the fact that the diastolic pressure increases about 3 mm. during that time, while the systolic increases only about 2 mm. The averages remain about 40 to 44 mm., until age 50, after which they increase markedly. The pulse pressure also rises slightly with increasing weight. Both these phenomena are accounted for by the greater rise in systolic than in diastolic pressure under these conditions.

Although the average pulse pressure shows little change in the different age periods, the applicants examined at the home office show that the range between the extremes of high and low is much greater than in the systolic or diastolic pressure, in proportion to its size. Thus, the lowest pulse pressure was 20, and the highest, 64. Between 20 and 64 is a range of 44 mm., which is as large as the average pulse pressure for all ages. On the other hand, the range of systolic pressures was from 95 to 160 mm. This represents a gap of 65 mm., which is barely a half of the average systolic pressure. The diastolic range was from 50 to 103 mm., a gap of 53 mm., which is only a little more than half of the average diastolic pressure.

Not only the range of deviation, but also the amount of deviation from the average is much greater in the pulse pressure. This is well shown by the coefficients of variation for the three pressures. The coefficient of variation is obtained by dividing the standard deviation by the average, and is a very good measure of the extent and quantity of the deviations from the average.

The diastolic coefficients (10 for all ages combined) are slightly larger than the systolic (9 for all ages combined), but the coefficients of the pulse pressure (17.7 for all ages combined) are much larger than either of the others. They are more than twice as large as the systolic coefficients in some age periods, and nearly twice as large as the diastolic coefficients. This is not unnatural, since the pulse pressure is the resultant of the two variables, the systolic and the diastolic.

We are all impressed by the fact that the average pulse pressure remains nearly at a level up to age 50, and after that rises only a few millimeters, while both the systolic and the diastolic pressure increase steadily with age, and the increase in millimeters is larger than in the pulse pressure. At first, this seems to indicate that the pulse pressure is the more stable and less liable to erratic fluctuations. But even this stability is fictitious, if we take into account the average number of millimeters in each of the pressures.

This marked variability of the pulse pressure, with a range from 20 to 60 mm. in apparent health, casts some doubt on its clinical significance and its value for insurance purposes. A favorite ratio has been: pulse pressure 1: diastolic pressure 2: systolic pressure 3. This is the so-called 1:2:3 ratio, and is probably derived from the averages. The pulse pressure of 42, which is obtained from a diastolic of 84 and a systolic of 126, is ideal. But is there any reason why a risk should be called unhealthy when the diastolic pressure is 84 and the systolic 104, or when the diastolic is 90 and the systolic 110? Yet in these cases the ratios would be 1:4:5, and 1:4.5:5.5. Should a risk be considered unhealthy when the systolic pressure is 140 and the diastolic, 70? This gives a pulse pressure of 70, and the ratio becomes 1:1:2. Doubtless, these unusual pulse pressures call for very careful examinations of the cardiovascular apparatus. In the last case, the medical examiner should look most carefully for any evidence of aortic leakage, and in both sets of cases for any signs of arteriosclerosis. If he certifies that there is no evidence of any impairment in the heart or vessel after careful examination, applicants presenting these unusual cases should not be regarded as unhealthy. Perhaps it may be said that a pulse pressure less than 30 mm. or larger than 56 mm. should be regarded as a warning signal to examine the heart and vessels with great care; but otherwise its value to us for life insurance seems quite limited. Much research will have to be made and many facts accumulated before it can be determined whether it has any real significance.

The pulse pressures of women are 1 or 2 mm. less than men's throughout life. In the younger ages, this is due to the fact that woman's systolic pressure is lowered more than her diastolic in proportion to man's. In the ages above 50, on the other hand, her diastolic pressure is raised more than the systolic proportionately.

An effort has been made to use the product of the pulse pressure and the pulse rate as an index of the work of the heart. Addis has written an excellent paper on this product.[10] Before it can be used for insurance purposes, it will have to be studied carefully. He says:

> The striking difference between the averages of normal individuals under basal and daytime conditions are the clearest illustration of the necessity for uniformity in the conditions under which the observations are made. It is not possible to use the basal normal for the evaluation of pressures obtained in patients in the morning if they have been out of bed even for a moment. The normal values for daytime measurements cannot be taken as a standard for observations made on patients who are standing or sitting, or on those who have just walked up a flight of stairs. The variability of normal blood pressure under such conditions is not known.

All of his readings were taken with the subject lying down, while practically all insurance records are taken with the subject sitting up. His coefficients of variation for systolic pressure were 11 for basal and 13 for daytime; for diastolic pressure, 14 for both basal and daytime; and for pulse pressure, 30 for basal and 28 for daytime. These coefficients are decidedly larger than those obtained in our study, and they tend to show that the blood pressure in all aspects is more variable when the subject is lying than when he is sitting. Perhaps some of his "normal" cases, which numbered only 300, would be classified as idiopathic vascular hypertension, described by O'Hare.[11] A careful reading of papers by O'Hare, Addis and others has convinced me that the method of obtaining the blood pressure as followed by insurance companies is trustworthy and reliable for persons in average good health. Doubtless, food, exercise and excitement have some effect; but they are rarely sufficient to raise the blood pressure in a healthy man above the point of acceptance by a life insurance company. If an applicant's blood pressure is too high at the first examination and remains so after he has been properly soothed and quieted, it does not often come down to acceptable figures at a second examination, unless treatment is taken. Very few readings are so low on account of dread of the examination as to need a second test, for life insurance has become a commonplace to most applicants.

SUMMARY

1. The systolic pressures of healthy men are set forth in Table 2, which is to be read in connection with Table 1. They increase decidedly, both with age and with weight. Nearly half of the increase from age and weight both is due to the increasing proportion of systolic pressures between 141 and 150 mm. In connection with the use of a numerical rating, as is the practice of the New York Life Insurance Company, which charges an excess rating for a systolic pres-

10. Addis, Thomas: Blood Pressure and Pulse Rate Levels; Levels Under Basal and Daytime Conditions, Arch. Int. Med. **29**: 539 (April) 1922; Blood Pressure and Pulse Rate Reactions, ibid. **30**: 240 (Aug.) 1922.

11. O'Hare, J. P.: Am. J. M. Sc. **159**: 369 (March) 1920.

sure of 140 mm. in the ages below 40, a question arises whether any systolic pressure above 140 mm. should not be suspected of pathologic possibilities. The mortality ratios do not definitely prove this, but, for pressures above 145 mm., they indicate it strongly. The results obtained by Dr. J. W. Fisher [12] corroborate this view.

Pressures below 100 mm. are rare in life insurance. They will usually be found in the very young and thin, and life insurance has shown that the applicant presenting the combination of youth, thinness and a pressure below 100 is prone to tuberculosis. To some extent this holds true also for those having a pressure below 110. Among those who are not young, these low pressures do not seem to be associated with increased mortality. In fact, the mortality ratios indicate that low pressure after age 45 is desirable. This is of great interest, for the average systolic pressure begins to increase decidedly at that age. It would seem that the average pressure runs counter to the best interests of health. In that respect, it resembles weight; for the average weight increases with age, while the lowest mortality after age 45 is found among those who are 15 per cent. lighter than the average weight.

The systolic pressures of healthy women are a little lower than man's up to age 40, partly for the reason that women weigh less up to this age. After that, they are a little higher than man's, and they behave like man's with reference to pressures over 140 mm.

2. The diastolic pressures of healthy men are set forth in Table 4, which should be read in connection with Table 1. They increase with weight and age in about the same proportion as the systolic pressure. It is possible that a diastolic pressure above 94 mm. is in the danger zone.

The diastolic pressures of healthy women are a trifle lower than man's up to age 40, and a trifle higher after age 50.

3. The pulse pressures of healthy men are set forth in Table 5. As it is not a real measure, but merely the difference between the systolic and diastolic pressures, all of its attributes depend on these. It is very variable, and its value to life insurance seems to be merely incidental and not substantial.

Probably life insurance and general medicine will never regard blood pressures in the same light. Life insurance sees only persons who are healthy, or at least think they are. Even the highest pressure of fat, elderly persons is below 140 mm. on the average, if they are acceptable for life insurance. This also means that practically as many are below 140 mm. as above, and we have seen that, of those above 140 mm., nearly all of them are below 150 mm. General medicine, on the other hand, sees those who feel that they are sick. If their illness is due to abnormal blood pressure, it is usually high, frequently as high as 200 mm. or more. General medicine knows that these high pressures will come down to 170 mm. or 180 mm. by appropriate treatment, and many of the patients will live for years. But medicine does not realize that a small increase in the number of deaths each year means a great difference to life insurance. At age 50, we expect only fourteen to die in the following year out of 1,000 living, and we call that 100 per cent. mortality. If twenty-eight die, our mortality jumps up to 200 per cent. At age 60, if the number of deaths among 1,000 living increases from 26.69 to 40.04, the mortality increases to 150 per cent. If a practitioner should see 1,000 patients with high blood pressure at age 60, and wager with himself that 974 would survive the year and only 960 did survive, he would not feel downcast. In fact, he would probably point to the record with pride and boast of his ability in prognosis. But life insurance would have to tell him that his mortality was 150 per cent. in that group, and a medical director who did not make a better guess than that would not hold his position long. General medicine would look complacently at the living, but life insurance would ruefully regard the dead, for forty claims would have to be paid instead of the twenty-six expected.

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12. Fisher, J. W.: Proceedings of Association of Life Insurance Medical Directors **7**: 21, 1920-1921; 1915-1916, p. 203.

PERICARDITIS CALCULOSA

REPORT OF A NEW CASE DISCOVERED ROENTGENOLOGICALLY *

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Rarely does the roentgen-ray examiner stumble onto anything more interesting and startling than the revelation of a calcareous deposit in the pericardium. This relatively rare deposit of lime salts, occurring in a regular or irregular manner on the surface of the heart, sometimes loosely spoken of as "ossification" and "bone" in the pericardium, is more properly designated as pericarditic calcification or pericarditis calculosa. The calcium deposit, composed of the phosphate combined with small amounts of the carbonate and a trace of sodium, usually is confined to the pericardium; but it may extend into the substance of the heart.

There have been published several excellent summaries of our knowledge of the pathology and symptomatology of this rare condition, notably those by Diemer,[1] Jones,[2] Mitchell,[3] Klason [4] and Mueller.[5] The total number of cases found reported in the literature prior to 1922 is ninety. To these I have a new case to append.

REPORT OF CASE

Mrs. Z. R., aged 45, housewife, whose family history was negative, in childhood suffered from measles, mumps, whooping cough, and what was thought to be a light attack of scarlet fever. The menses were always irregular and scanty, and ceased entirely at 25. She was married at 18 and had one confinement, which was normal. Except for constipation, her health had been good until the death of her son in France in 1919. At this time she suffered a collapse, followed shortly by swelling of the abdomen and the left side of the neck. The urine had always been scanty. Abdominal distention continued until July, 1920, when 8 quarts (liters) of fluid were removed by paracentesis. She was tapped again in September, 1920, and had been tapped subsequently at intervals of from seven to ten weeks. On account of her physician's apprehension regarding her kidneys, the patient had lived on a low-protein diet ever since her collapse. Physical weakness had grown very marked. Some shortness of breath had been noted.

* From the Surgical Department of the Battle Creek Sanitarium.

1. Diemer, F.: Ueber Kalkablagerungen an den serosen Hauten des Hertzens, Ztschr. f. Heilk. **20**: 257, 1899.
2. Jones, A. E.: Lithemia, Charlotte M. J., March, 1901.
3. Mitchell, J. H.: Calcification of the Pericardium, Tr. Chicago Path. Soc. **8**: 109, 1909-1912.
4. Klason, T.: Pericarditis calculosa und Herzverkalkungen, Acta radiol. **1**, Pt. 2:162-176, 1921.
5. Mueller, E. F.: Perikarditische Verkalkungen, Fortschr. a. d. Geb. d. Röntgenstrahlen **25**: 231, 1918.

The blood pressure was 112 systolic and 70 diastolic. The height was 58 inches (147 cm.); the weight, 112 pounds (51 kg.) after tapping.

The temperature was 98.6 F.; the pulse, 84. The teeth were in a bad state; pyorrhea was marked. The left cervical and axillary glands were enlarged.

There was decreased resonance over the lower half of both lungs posteriorly, accompanied by râles suggesting a chronic venous congestion.

Liver dulness was moderately increased. No irregularities were palpable along the lower margin of the liver, or revealed on the upper border of the liver shadow during fluoroscopic study. No splenic enlargement was found.

Pelvic examination revealed a urethral caruncle; a small, atrophic uterus; the fundus not palpable. Rectal examination was negative except for evidences of mucous colitis.

The bones and joints were normal. The pupillary reflexes were normal; the patellar reflexes were absent.

There was moderate edema of the legs extending to the ankles, although, when questioned, the patient stated that she had not noted the occurrence of such a symptom before.

Urine examination revealed from none to two hyaline casts, an occasional trace of albumin, persistently low specific gravity and scanty urine, the average twenty-four-hour specimen being 600 c.c.

Blood study revealed: hemoglobin, 70; red cells, 3,010,000; leukocytes, 12,000; blood Wassermann reaction, negative; nonprotein nitrogen, 28.4; blood sugar, 90.

The alveolar carbon dioxid tension was 38; acetone, 0.

A barium meal study gave normal findings for the stomach and intestine except for marked colonic stasis, for which no organic obstruction could be found aside from marked spasticity of the terminal colon. The emptying time of the colon was much longer than seventy-two hours, in spite of cleansing enemas. It was felt that the barium meal study excluded the presence of malignant disease in the gastro-intestinal tract.

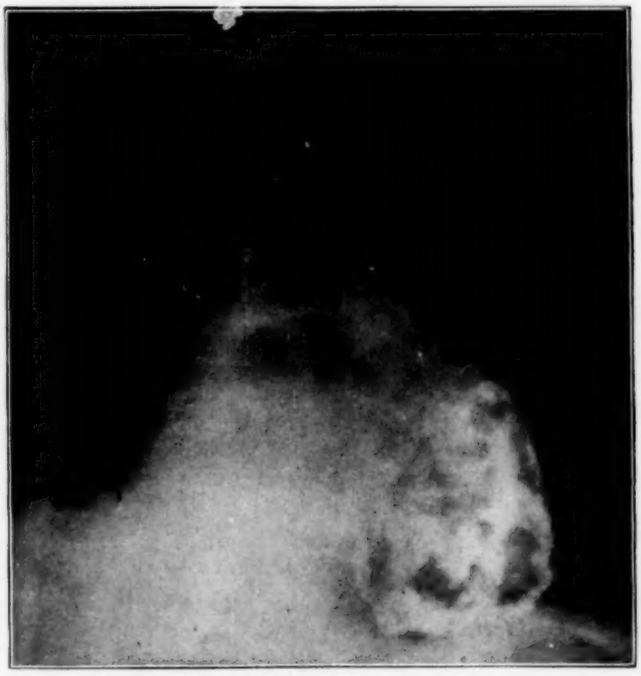

Fig. 1.—Heart of author's patient.

The patient complained of marked cardiac palpitation, which she thought was due to the pressure of the distended abdomen. There was no precordial tenderness. The apex beat was palpable in the fifth interspace. Cardiac dulness on percussion extended 8 cm. to the left of the midline. The heart sounds were fairly distinct. No murmurs were heard at the apex. A slight systolic sound was heard at the base. In the erect position the heart sounds were distinct; the murmur was not increased. The heart action was irregular. The physical examination elaborated by the electrocardiogram led to a diagnosis, by Dr. M. A. Mortenson, of myocardial degeneration, with evidence of auricular fibrillation and myocardial inefficiency.

Thus far in the study of this case, no suggestion had been offered as to any other unusual condition of the heart, although the patient's chest had been examined fluoroscopically in connection with the barium meal as well as during the usual entrance examination given all new patients. The costophrenic angles were noted as clear, the diaphragm showing normal excursion on both sides. At this juncture a review of the roentgen-ray findings was requested, and I was fortunate in observing a very unusual shadow in connection with the heart, apparently pulsating with the cardiac contractions, yet in the periphery of the cardiac shadow. In the left side of the heart shadow there was an area of calcification, lying in the pericardium in the form of an ovoid patch, 8 cm. in diameter, occupying the anterior and inferior surface of the left aspect of the cardiac outline. Careful study of the stereoscopic roentgenograms made in several positions gives one the impression that this irregularly calcareous patch is flat and suggestive of a piece of "armor plate." An estimation of the calcium content of the blood was then made by Clark's method, with a resulting figure of 6.1 mg. of calcium for each hundred cubic centimeters of blood, which is a little lower than the normal figures, from 7 to 10 mg. (Dr. W. B. Lewis).

For nearly a year the patient has continued treatment aimed principally at the cardiac, renal and hepatic inefficiency. She has been tapped at irregular intervals, on the whole less freqently than before. The weight and strength have increased. The urinary output continues scanty and of low specific gravity. Edema of the lower extremities and a general appearance of puffiness continue in spite of the treatment.

The clinical diagnosis is: myocardial degeneration with auricular fibrillation; pericardiac calcification; chronic nephritis; the syndrome of hepatic cirrhosis with ascites.

COMMENT

Numerous points of great clinical interest present themselves for discussion in connection with this condition. As before suggested, less than a hundred such cases are on record, and the great majority of these were discovered accidentally at necropsy. Various authors writing prior to 1899 declared that the diagnosis had never been made on the living patient and, indeed, could never be made except accidentally from the introduction of a knife. In a series of thirty-eight cases reported by Jones [2] in 1901, only one case is mentioned as being diagnosed as adherent pericardium during life, although pericardial synechia is constant in percarditis calculosa.

The possibility of discovering pericardial calcification roentgenologically was suggested by Diemer [1] in 1899, and by Simmonds [6] and by Lydtin [7] in 1907. It remained for Schwarz [8] of Vienna to realize this possibility in 1910 when he reported a case in which fluoroscopy of the thorax revealed within the heart outline a number of denser shadows which moved coincidently with the cardiac pulsations. The largest of these measured 2 by 3 cm., and occupied the left and anterior border of the pericardium. The patient had no symptoms relative to the heart, but some years previously had suffered a severe blow on the precordial region.

In 1911, Schwarz [9] discovered a second case in a woman, aged 33, with enlargement of the liver and ascites, but without edema of the lower extremities. Screen examination of the thorax revealed a denser, pulsating, finger-wide shadow extending from the left

6. Simmonds: Fortschr. a. d. Geb. d. Röntgenstrahlen **12**, 1907.
7. Lydtin: Diss., München, 1907.
8. Schwarz, G.: Wien. klin. Wchnschr. **23**: 1850, 1910.
9. Schwarz, G.: Wien. klin. Wchnschr. **24**: 1386, 1911.

apex at the lower border of the heart shadow upward toward the middle line.

Groedel,[10] in 1911, also recorded a case of pericardial calcification discovered fluoroscopically, the shadow in this instance likewise occupying the left side of the heart, anteriorly, along the auriculoventricular border.

Rieder,[11] in 1913, recorded two cases similar to the foregoing, discovered during fluoroscopy. In one of these, however, the calcification was first found during the third fluoroscopic examination. Later plate examination established the fact that a dense deposit of lime had occurred between the auricle and the ventricle, parallel with the left border of the heart, extending from the apex upward toward the middle line; and that there were numerous less dense radiating shadows branching off from the principal calcareous deposit, forming a sort of network. Lateral and oblique screen study disclosed, further, that the densities extended along the anterior and inferior borders of the heart, the posterior border being entirely free from calification.

Alfred Weil,[12] in 1916, reported a case of "armored heart" occurring in a young soldier exhibiting the clinical picture of Pick's pericarditic pseudocirrhosis of the liver. The anterior and inferior surfaces of the ventricles were encircled by a crust of lime. There was a gap in the mail-like calcareous coat at the apex into which the heart seemed to be forced, perhaps accounting for the diastolic scratching heard with greatest distinctness just at the apex. The first complaints, three years previous, were increasing dyspnea on exertion, and abdominal distention. At that time clinical examination established cardiac dilatation, hepatic enlargement and ascites, and occasional edema in the lower extremities. Under appropriate treatment, he was able to resume light work. The calcareous deposits were at first overlooked, being found only when the patient was later subjected to roentgen study.

Klason [4] of Stockholm, in 1921, cited two other cases found roentgenologically by Brauer and by Assmann, and added five additional heretofore unreported cases of pericarditis calculosa, three of them discovered accidentally during postmortem studies, the other two found roentgenologically in the living patient. Figure 2, an illustration borrowed from Klason, is a roentgenogram of the heart in the living patient, showing the distribution of the calcareous accumulations.

I have thus been able to obtain literature concerning eleven [13] cases of calculous pericarditis discovered in the living patient, thanks to the roentgen examination, and the case herewith detailed constitutes the twelfth.

Calcareous deposits in the endocardium and myocardium have long been recognized at the necropsy table, but the likelihood of such calcifications being discovered roentgenologically is extremely remote. On the other hand, the gross pericardial lime incrustations recognized at necropsy as long ago as 1724 should be found roentgenologically without serious technical difficulty. It is true that the condition is rare, only about ninety cases being recorded up to date. Wells,[14] in 1902, reported four cases of "calcific pericarditis" out of 1,048 necropsies at Rush Medical College. Chambers [15] found that in five out of eighty-six cases of adherent pericardium, formation of "bony" material had taken place in the old fibrin. It is likely that the number of reported cases will rapidly increase now that the roentgen rays are coming into such general use in clinical examinations.

AGE AND SEX

The average age at which the condition under discussion occurs was 48.4 years in fifty cases studied by Jones.[2] The youngest patient was 11 and the oldest 91. These cases were all discovered at necropsy, however. With the aid of roentgenology, many cases are being discovered antemortem in younger patients. The proportion of males to females is as two or three to one.

ETIOLOGY

Various causes have been suggested. The insidious onset of symptoms renders it probable that inflammatory products may be gradually converted into calcified tissue. It is significant that almost without exception the visceral and parietal layers of the pericardium are united by a plastic process, in which the calcareous deposit occurs. There is a total obliteration of the pericardial cavity. Impaired circulation is probably an important factor; other calcifying factors are decreased metabolism, necrobiosis and tissue necrosis. A number of the cases cited above give a history of pericarditis, pleurisy or some undetermined "trouble" in the chest. It was only rarely, though, that a diagnosis of adherent pericardium was made during the life of the patient. Careful attention to certain details of fluoroscopic technic emphasized by Klason,[4] referred to later, may increase the number of diagnoses of synechia pericardii.

DISTRIBUTION

The lime deposits occur especially over the anterior and inferior aspects of the ventricles, while the auricles are rarely affected. This may be due to a circulatory condition. Virchow,[16] in 1858, considered that the distinct calcifications found in the lungs, stomach, kidneys, intestines and blood vessels were due to a superabundance of lime salts in the blood, and that inadequate renal elimination might also be a causative factor, as many of these cases are associated with advanced renal disease. Virchow thought that the deposits occurred more frequently in organs rich in blood supply. Von Recklinghausen,[17] contrary to Virchow, considered that calcification occurred in tissues poor in blood supply, and that calcification could proceed when the calcium content of the blood was normal. Wells [14] showed that frank calcification might occur in the absence of any discoverable pathologic etiology. Galleani,[18] by injection of mercuric chlorid into the kidney substance of a rabbit, produced a lesion exhibiting calcification after undergoing a fibrinous necrosis. Litten [19] produced a similar lesion in the renal tubules by ligation of the renal artery.

Bernardie,[20] in discussing calcification of uterine myomas, brought forward very interesting data supporting the theory that calcification of fibroids is the result of some form of necrobiosis associated with a progressively diminishing blood supply. Peraire [21]

10. Groedel, F. M.: Fortschr. a. d. Geb. d. Röntgenstrahlen **16**, 1911.
11. Rieder, H.: Fortschr. a. d. Geb. d. Röntgenstrahlen **20**: 50, 1913.
12. Weil, Alfred: Armored Heart and Pick's Hepatic Cirrhosis, Fortschr. a. d. Geb. d. Röntgenstrahlen **23**: 489 (No. 6) 1916.
13. Schwarz, two; Groedel, one; Rieder, two; Weil, one; Brauer, one; Assmann, one; Klason, two; Mueller, one.
14. Wells, H. G.: The Pathology of the Healed Fibrous Adhesions of the Pericardium, Am. J. M. Sc. **123**: 241, 1902.
15. Chambers, quoted by Jones (Footnote 2).
16. Virchow, Rudolph: Cellular Pathology, New York, 1859.
17. Von Recklinghausen, quoted by Klotz: J. Exper. Med., 1895, p. 633.
18. Galleani: Lo Sperimentali **58**: 371, 1904.
19. Litten. Ztschr. f. klin. Med., 1879.
20. Bernardie, A.: Thèse de Paris, 1901.
21. Peraire: Tr. Soc. anatomique, Paris, 1909, p. 151.

states that calcification of an intra-uterine pedunculated fibroid is very rare because its blood supply remains adequate.

It is conceivable that the process may begin as a serofibrinous or fibrinous pericarditis. During the production of the reactive granulation tissue there is a reduction of the blood supply to the fibrinous masses, which, when not absorbed, may remain imprisoned for a long time. Such dead masses in which the circulation is very slow and insufficient have a decided tendency to undergo calcification (Klason). Naturally, the lime would accumulate in those regions of the pericardium subjected to the least disturbance from the contractions of the chambers of the heart.

Various infections have been noted in the histories or in the necropsy reports in many of the cases of pericarditic calcification, notably tuberculosis, *Streptococcus viridans* infection, typhoid, and pyorrhea alveolaris. "Rheumatism" is frequently referred to in the histories.

In the case here reported, the calcium content of the blood was just below the figures given as normal by Clark,[22] and by Halverson, Mohler and Bergeim.[23] These writers obtained values lying between 9 and 11 mg. of calcium for each hundred cubic centimeters in normal cases, with distinct decreases in patients suffering from hematogenous jaundice, eclampsia, pneumonia, and particularly anemia and severe nephritis. In my patient there are definite evidences of a long-standing renal inefficiency, and a calcium value of 6.1 mg. for each hundred cubic centimeters of blood by Clark's method. Diemer [1] reiterates that a slowing of the circulation favors the process of calcification, and under such circumstances an abnormally high calcium content of the blood does not play an important rôle.

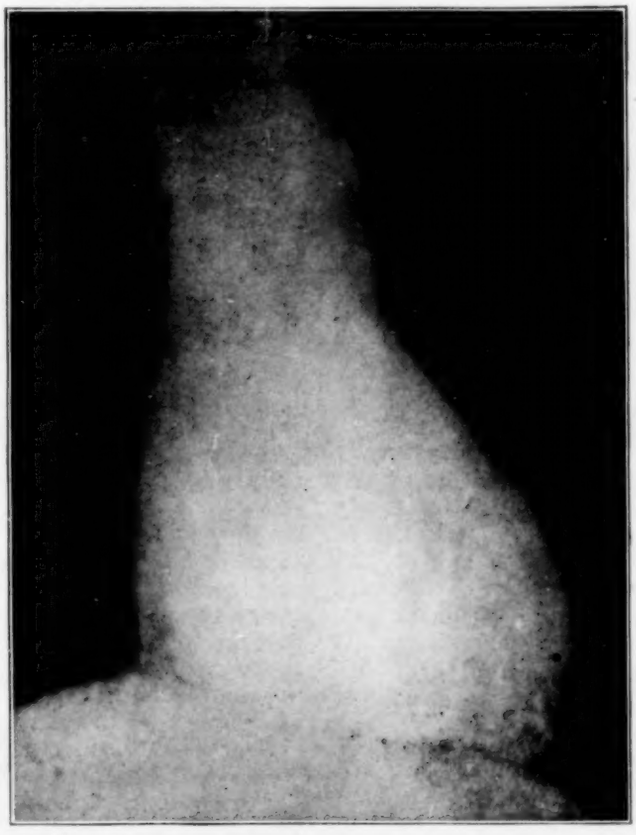

Fig. 2.—Heart of Klason's patient.

DESCRIPTION

The descriptions of the calcareous deposits vary slightly. Some have been described in the preceding pages. The following quotations are from other previously reported necropsy cases:

The visceral surface of the pericardium was lined with irregular, ragged calcareous masses; the parietal surface on the inside had a smooth calcareous plate measuring 7 by 3 cm.[2]

There was a thin, calcified band across the front of the ventricles, which ran with the convex margin toward the apex; along the right border this band extended up to the right auricular appendix. Posteriorly there was a broader band which was attached to both the diaphragm and the heart.[24]

Douglas and Yates [24] state that the condition undoubtedly began as a purulent pericarditis; absorption took place, but in a ring, and calcification followed.

The pericardial sac was entirely obliterated and the membrane enormously thickened. Because of the thick calcareous plate which had formed in the pericardium, it was impossible to open the heart in the ordinary way.[25]

There were adhesions of the pleura, and the layers of the pericardium were universally adherent. Over the right auricle anteriorly and over the posterior part of the left ventricle, there was a calcareous plate, dense, hard, over 12 cm. broad, and from 6 to 10 mm. in thickness. The anterior wall of the left ventricle was free.[26]

With the tissue of the pericardium there was found an extensive deposit of calcareous matter which covered the whole anterior surface and about half the posterior. The thickest part of the deposit occurred where the pericardium unites with the central tendon of the diaphragm. As it extended upward in two parts, the deposit gradually became thinner. The inner surface of the pericardium was roughened in spots by the concretion. . . . The arch of the aorta presented a calcified surface 6.5 sq.cm. in area. There was also calcareous degeneration of the internal carotid, the vertebral and the ophthalmic arteries.[27]

Both pleural cavities obliterated by adhesions. Pericardium adherent to anterior chest wall and adjoining mediastinal tissue. Pericardial cavity entirely obliterated and the seat of extensive calcareous infiltration. A large section of the heart was encased in a hard calcareous sheath, which implicated the pericardium of the right ventricle, about one half of the anterior and under surface of the right auricle, the left edge of the heart, and the lower two thirds of the left ventricle, the apex and the diaphragmatic surface of the heart. This calcareous sheath appeared to be made up of a single calcareous plate.[28]

Both pleural cavities obliterated. . . . The pericardial cavity was entirely obliterated and largely calcareous, the calcified mass being in the left half of the pericardium anteriorly and posteriorly, and on the under or diaphragmatic surface. There was a hornlike projection from this calcareous plate which extended out in front of the inferior vena cava

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27. Fenn, C. T.: Calcareous Degeneration of the Pericardium, Chicago M. J. **25**: 321, 1868.

28. Kelly, A. O. J.: On multiple Serositis: The Association of Chronic Obliterative Pericarditis with Ascites, etc., Am. J. M. Sc. **125**: 116, 1903.

so that it partially surrounded its diaphragmatic opening [youth, aged 19].[29]

The heart was normal in size; the only portion of the ventricle free from a calcareous covering was a part about 2 cm. in diameter at the left anterior and inferior angle. The heart muscle was infiltrated with calcareous material. Both layers of the pericardium were welded together and formed an irregular calcareous casing for the heart. In its thickest part this covering was 18 mm. thick. There was a ridge of exceptional hardness around the interauriculoventricular groove.[30]

Pericardial sac obliterated, the two layers being united; large calcareous deposits in the pericardium around the base and especially over the inferior vena cava [girl, aged 13].[31]

Pericardium and epicardium grown together. On section it was found that a hard ring of varying width, following the course of the sulcus circularis, surrounded the entire heart. The thickest part of this ring was a calcareous deposit which covered the surface of the right auricle, extending on both sides toward the right and left ventricle. The deposit of calcium showed the amorphous, not the crystallized form.[1]

There was a ring-shaped calcareous deposit in the pericardium; on the left border of the heart the ring was closed by a strip of material of lighter consistency.[1]

The two layers of the pericardium were bound together by a membrane of connective tissue. At certain points along the coronal sulcus, instead of the connective tissue a calcareous plaque 2.0 to 2.5 mm. thick lay between the two layers attached to both, surrounding the heart in the form of a ring of varying width.[32]

The layers of the pericardium were closely adherent. On section, a calcareous strip was found crossing the posterior wall of the left ventricle, forming a plaque under the mitral valve, surrounding the base of the ventricles in a complete ring.[33]

Review of the foregoing excerpts from the reports on postmortem material suggests at once the frequency of an associated or preceding pericarditis, and in many instances evidence of old involvement of the pleura, especially that covering the diaphragm. It is also evident that the presence of the calcareous deposit in the pericardium masks the physical signs and renders more difficult than usual the diagnosis of adherent pericardium. From the roentgenologic standpoint the following may be suggested as signs of pericarditis adhesiva: (*a*) a triangular shaped heart; (*b*) disappearance of the boundaries between the various heart chambers, usually made out fluoroscopically; (*c*) diminished excursion of the edge of the cardiac shadow during heart action, and (*d*) diminished mobility of the heart in relation to the diaphragm with the patient in the lateral positions.

TECHNICAL DETAILS FOR ROENTGENOLOGIC STUDY

The roentgenologic study of pericarditis calculosa should be carried out both with the screen and with plates. Several cases, finally discovered, went through repeated plate and screen study before the diagnosis was made.

Klason [4] believes the fluoroscopic study more valuable than the roentgenographic. True, one can vary the penetration of the ray employed and can turn the patient in various directions more easily and economically with the screen than with the plate method. I prefer a combination of screen and roentgenographic examination, though in the case reported in this paper I discovered the calcified pericardium while repeating a part of the barium meal study. Such a case impresses very forcibly the lesson that no fluoroscopic observation should ever be attempted until after the eyes have been thoroughly prepared for screen observations by a long preliminary stay in the dark.

CONCLUSION

It is hoped that the foregoing report and discussion may stimulate renewed interest in and search for calcareous depositions in the pericardium. Such calcifications, which must remain unsuspected before a roentgen-ray examination, are of great importance, for a heart shackled by a pericardial calcareous shell must be seriously hampered in its action. The discovery of this rare and interesting complication will add light to many cases with circulatory disturbances, ascitic manifestations and hepatic cirrhosis.

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MENACE OF THE DIAGNOSTIC THROAT CULTURE IN DIPHTHERIA *

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The etiologic relationship between diphtheria and the diphtheria bacillus has been established beyond cavil. It may seem a platitude to assert that the disease known as human diphtheria is the reaction of the body to the toxin of the diphtheria bacillus. The unfortunate annual succession of tragedies witnessed at the Willard Parker Hospital, traceable to lack of clear thinking on this point, have forced us to emphasize the fact that the presence of diphtheria organisms in the throat is not synonymous with diphtheria, and that the failure to find diphtheria organisms in culture tubes inoculated from swabs passed over the mucous membranes of the throat does not exclude the presence of diphtheria. In the interests of clear medical thinking, we wish to emphasize the fallacies that may result from the throat culture diagnosis of diphtheria, and the dangers consequent upon delay in making the diagnosis from a laboratory report instead of from the clinical picture.

FALLACIES

The presence of a virulent culture of diphtheria bacilli may be reported from the throats of sick or of healthy persons who are carriers. From a public health standpoint, the detection of carriers is a matter of great importance, and it interests us as practicing physicians. Fifteen per cent. of all children in great cities are immune carriers of diphtheria organisms and are therefore deprived of hospital care by the usual procedure. Shick testing and immunization would obviate this. The absence of diphtheria bacilli in throat cultures taken from patients ill of diphtheria has been the subject of special investigation. In the taking of cultures from more than a hundred patients admitted to the diphtheria service at Willard Parker Hospital, the usual superficial culture was taken in two tubes, as well as a deep culture, the swab being placed between the

* From the Willard Parker Hospital, Department of Health, New York.

membrane and the tissue. One of the superficial cultures was sent to the diagnostic laboratories of the board of health. The other was sent, in order to avoid chilling and delay in incubation, to the pavilion laboratory, and was examined by one of us. In our laboratory, we obtained 3 per cent. more positive cultures than the health department laboratory, which reported no growth in cases in which we obtained diphtheria bacilli. We obtained 12 per cent. more positive cultures from *under* the membrane than from the usual superficial culture.

DANGERS OF DEPENDING ON THE DIAGNOSTIC CULTURE

The dangers of depending on the diagnostic culture may be presented both statistically and by the report of individual cases. In diphtheria, the factors involved

TABLE 1.—PRIMARY CULTURES OF ONE HUNDRED PATIENTS WITH CLINICAL DIPHTHERIA

	Culture Positive Per Cent.
Surface, department laboratory	80
Surface, pavilion laboratory	86
Under membrane, pavilion laboratory	98

in any case are the virulence of the organism and the natural resistance of the patient. This may seem to be another platitude; but all statistics involving the duration of illness must be read with this knowledge. As a rule, patients with diphtheria enter our institution as soon as the diagnosis is made. For the last three years, our mortality (excluding laryngeal cases) has been: during the first twenty-four hours, from 27 to 30 per cent.; during the first forty-eight hours, 14 per cent.; for more than forty-eight hours, 54 per cent. The average period of illness in the fatal cases, without antitoxin before admission, was four and one-half days. The mortality in 300 cases, considered in respect to the number of days before treatment was administered, was: first day, 0; second day, 0.01 (on admission, all three patients had a complicating bronchopneumonia); third day, 0.02 (three patients with myocarditis: one, laryngeal and two, bronchopneumonia); fourth day, 0.026 (five, diphtheria, toxic); fifth day, 0.03 (straight diphtheria, toxic); sixth day or later, 0.04 (straight diphtheria, toxic).

Delay in the administration of antitoxin is chargeable (1) to parents who fail to summon competent medical attention through an attempt at lay diagnosis or through a misinterpretation of symptoms, and (2) to physicians who fail to read a clinical picture, and thrust the burden of diagnosis on the laboratory. The most aggravated case of this kind was that of a man who was under a physician's care for eleven days and died after the membrane had been permitted to extend to the bronchi because frequent cultures taken in the usual way were negative. Six other cases were recently observed at the hospital:

REPORT OF CASES

CASE 1.—J. C., a girl, aged 6, had been ill four days before admission. The family physician had seen her on the second day of her illness. All that day she had complained of sore throat, and her mother said she had had a high fever. The family physician diagnosed acute tonsillitis, and cultures were taken the following day. No antitoxin was given, as the report on the culture was negative. The patient became worse, and on the fourth day was sent to the Willard Parker Hospital.

On examination, there was a characteristic odor of the breath, profuse serosanguineous nasal discharge, and membrane on both tonsils and the uvula, soft palate and posterior pharyngeal wall. The patient appeared toxic. She received antitoxin intravenously. Nevertheless, there occurred severe nasal hemorrhages and cardiac arrythmia; and she died on the nineteenth day of her illness.

Even in cases which are not fatal, the late administration of antitoxin subjects the patients to prolongation of their illness, and at times protracted or permanent crippling of the heart, or nervous system, as these cases show:

CASE 2.—S. A., a girl, aged 2½ years, who was ill six days before admission, was finally sent in on the advice of a consulting pediatrician. The patient had been seen by three physicians. Each in his turn had taken a culture, and all were negative; the child was getting worse, and the membrane had spread down the larynx. On admission, the patient was toxic. There was marked intercostal retraction, nasal discharge with excoriation, and a throat full of exudate, and the posterior or pharyngeal wall was lined with sloughing membrane. Laryngoscopy revealed a larynx blocked with membrane covering the aryepiglottic folds, arytenoids and vocal cords. There was also a subglottic membrane. On the fifth day, 10,000 units of antitoxin had been given intramuscularly; and 30,000 units was given on admission. In the hospital, throat and nose cultures revealed diphtheria bacilli.

CASE 3.—P. D., a nurse, aged 22, was ill five days before admission. The onset had been gradual, the chief complaints being sore throat, malaise and a slight rise in temperature. On the second day of her illness, she consulted a nose and throat specialist, and he took a throat culture. On the following day, Klebs-Loeffler bacilli were reported, and the patient was referred to the Willard Parker Hospital. On admission, she was seriously ill, complaining of sore throat, headache and dysphagia. She was slightly dyspneic. The tissues of the neck were swollen and tender. The throat was full of diphtheritic exudate, covering the tonsils and pillars. The uvula was edematous and congested. The temperature was 102 F., the pulse, 108. She received a massive dose of antitoxin intravenously, from which there was a severe reaction in two hours. Recovery was slow. This patient subsequently developed a palatal paralysis, with regurgitation, cardiac arrythmia and moderate degeneration of the heart muscle. She remained in the hospital fifty-four days.

TABLE 2.—THREE HUNDRED CASES OF DIPHTHERIA

Days Ill Before Treatment	Number of Cases	Mortality Per Cent.
1	80	0
2	79	3.6
3	64	6.4
4	36	13.9
5	21	23
6 and over	20	25

CASE 4.—A. Q., a nurse, aged 30, had been ill four days before admission. The tonsils, uvula, soft palate and posterior pharyngeal wall were covered with membrane. A throat specialist treated her for Vincent's angina because a throat smear had revealed the spirillum and bacillus of Vincent's angina. The membrane continued to spread, and a second culture revealed Klebs-Loeffler bacilli. She was then given 10,000 units of antitoxin intramuscularly. On admission, she was moderately prostrated. Breathing was difficult because of the throat obstruction. The temperature was 103 F. The appearance was toxic. She received antitoxin intravenously without reaction. Subsequently, there developed palatine paralysis and cardiac arrythmia.

CASE 5.—S. S., a charge nurse in a hospital, had been ill two days. Diagnosis and treatment waited another twenty-four hours for a culture report. The patient was admitted with a severe angina, dyspnea and inability to swallow. She was prostrated. The tonsils, palate, pharynx and uvula were covered with exudate. Antitoxin was administered intra-

muscularly and intravenously on admission. She was in the hospital for a month, and suffered subsequently for many months from heart weakness as the result of her illness.

CASE 6.—Dr. W. C., aged 57, was admitted, March 16, 1922, and was in the hospital for five months. He had been ill four days before admission. For three days, it was thought that he had an acute tonsillitis. On the third day, a culture was taken, and Klebs-Loeffler bacilli were reported twenty-four hours later. He then received 10,000 units of antitoxin intramuscularly, before going to the hospital. In our admitting room, he received an additional 10,000 units intravenously, and 20,000 units intramuscularly. A membranous exudate covered both tonsils and posterior pharyngeal walls, the uvula and the lateral two thirds of the soft palate. There was marked bilateral swelling of the neck. The anterior and posterior cervical lymph nodes were enlarged. His appearance was extremely toxic. Nine days after admission, he developed nasal voice and regurgitation. Subsequently, there developed a peripheral neuritis, with weakness, paresthesia, anesthesia, loss of knee jerks, and pain. There was also diplopia. Finally there developed paralysis of bladder control, which necessitated catheterization for a month.

COMMENT

This severe and dangerous illness and the costly loss of time are in contrast to the usual course of diphtheria promptly recognized and treated. Most of our patients leave the hospital well, on the twelfth day.

Even at the risk of retelling an oft-told tale, we shall recount the reaction of the human body to diphtheria toxin. Diphtheria toxin is an agent destructive to the chromaffin tissues. It is a capillary poison, at first stimulating the capillaries to contract, and later causing them to dilate, with hemorrhages.

LOCAL AND GENERAL PHENOMENA

The clinical picture resulting from reaction to the toxin may be divided into the local and general phenomena.

Local Symptoms.—There is a necrotic membrane surrounded by adjacent redness, and with pallor beyond. The designation of the disease is descriptive of the membrane which the Greeks called διφθέρα, meaning wash-leather. It is reminiscent of the ancient process of puering skins. Early pastoral people digested the elastic fibers of sheep and goat skins with the pancreatic extract contained in the dung of dogs or fowl. This softens the leather and makes it chamois-like; it also accounts for the offensive odor and the color frequently associated with such leathers. The diphtheria membrane is shaggy, is greenish yellow, has a characteristic offensive odor, and when it is removed there is bleeding. An adequate illumination is essential; the patient must be made to gag so as to avert the tonsils. A careless inspection of the throat or nose is unpardonable.

The lymph nodes in relation to the membrane are enlarged, and if the process lasts there is considerable perinodular edema and puffiness. The nodes become matted together. Other local symptoms depend on the location of the membrane. There may be obstruction of the nose, nasopharynx, pharynx or larynx.

General Symptoms.—These are due to the stimulation of the sympathetic nerve system. The pulse is always rapid, frequently disproportionately so when the temperature rise is considered. Often the temperature rises so little that it may mislead those who measure the severity of an illness with a thermometer. At times, there is a chill and a sharp rise of temperature at the onset; but the pulse is always rapid, and continues so unless appropriate treatment is instituted. In neglected cases, there is a general pallor and, later, hemorrhage into the skin or from the mucous membranes, with progressive, profound weakness.

It must not be forgotten that pus organisms may become pathogenic simultaneously with diphtheria bacilli, and that the reaction of the body to them may complicate the clinical picture.

When in doubt as to the correct interpretation of symptoms, it is better to give antitoxin needlessly than to err by waiting for a laboratory report.

The report from the laboratory adds nothing decisive to the diagnosis.

TRANSPLANTATION OF TENSOR FASCIAE FEMORIS IN CASES OF WEAKENED GLUTEUS MEDIUS

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The limp caused by a weak gluteus medius with marked swaying of the body toward the involved side, and dropping of the hip on the opposite side (Trendelenburg sign) is very noticeable in many cases of poliomyelitis.

Fig. 1.—Normal anatomic appearance about the hip. The black line along the tensor fasciae femoris represents the incision made in freeing this muscle before transplantation.

In the endeavor to alleviate this limp, I devised the plan of transplanting the tensor fasicae femoris muscle into the outer side of the femur to increase the power in the gluteus medius.

The tensor faseiae femoris is to some extent an abductor, but its greater power is in flexion. A function

of the gluteus medius often overlooked is its action in holding the center of gravity of the body over the supporting leg when standing on one foot. We are all familiar with the action of the gluteus maximus in holding the body erect and preventing the trunk from falling forward, but it is not generally recognized that the gluteus medius is equally necessary to keep the body

Fig. 2.—Groove in femur and freed tensor fasciae femoris with silk suture before insertion into the femur.

from falling to the opposite side whenever the weight is borne on one leg. Inability of the gluteus medius to perform this function causes a limp. There is either a dropping of the pelvis on the opposite side, similar to the Trendelenburg sign, which is an awkward gait, difficult to overcome, or else it results in an attempt to bring the center of gravity over the supporting leg by throwing the body to that side and reaching out with that arm, in the typical and distressing abductor limp.

METHOD OF PERFORMING OPERATION

The incision starts at the anterior superior spine, and extends backward and downward over the great trochanter, and then downward along the course of the femur for about 3 inches.

The skin with the subcutaneous fat is reflected forward, exposing the fascia lata.

Anteriorly, running downward from the anterior superior spine, the fascia lata is seen to become thin before extending over Scarpa's triangle. Along this line the fascia is incised downward from the anterior superior spine to 3 inches below the great trochanter, where it is divided transversely backward for about 1½ inches.

At about 1½ inches below the great trochanter, the fibers of the tensor fasciae femoris are seen becoming inserted into the fascia lata.

The outer surface of the femur is next exposed, about 2½ inches below the trochanter, by dividing the fibers of the vastus externus. A periosteal flap is turned downward at this point, and a groove, going into the marrow, is made about 1 inch long and one-half inch wide.

The free end of the fascia lata is then sutured with No. 18 twisted silk and inserted into the groove by carrying the silk ends through holes drilled in the femur on each side of the groove. The knot is tied over the fascia in the groove, and the periosteal flap is turned back and sutured over the groove containing the fascia.

Before the suture of the silk is completed, the thigh is abducted about 30 degrees, and the fascia is seen to have moderate tension.

The skin and subcutaneous fat flap are then turned back and sutured by layers to their original situation.

A plaster spica is applied from the waist to the ankle, with the leg in 30 degrees' abduction.

The postoperative treatment consists of simple superficial massage after two weeks, and muscle training is begun after four weeks. The patient is allowed to go about with the spica and crutches at the end of four weeks.

At the end of two months the spica is removed and an abduction walking splint applied, which the patient wears for six months.

SUCCESS OF OPERATION

So gratifying have been the results of this operation that I have now performed fifteen such operations with very satisfactory results in most cases. The Trendelenburg sign has disappeared and the lateral swaying of the body has markedly diminished, if not disappeared.

The success of the operation depends largely on a careful choice of suitable cases. It will not be of great benefit in cases in which the limp is due to weakness of both the gluteus maximus and the gluteus medius. These patients find it necessary to sway the body backward as well as to the side, diagonally, in order to preserve their equilibrium, and the backward sway due to the weak gluteus maximus will remain after the operation, proving fully as unsightly as the original limp.

It is also important to distinguish whether the dropping of the pelvis is due to weakness of the gluteus

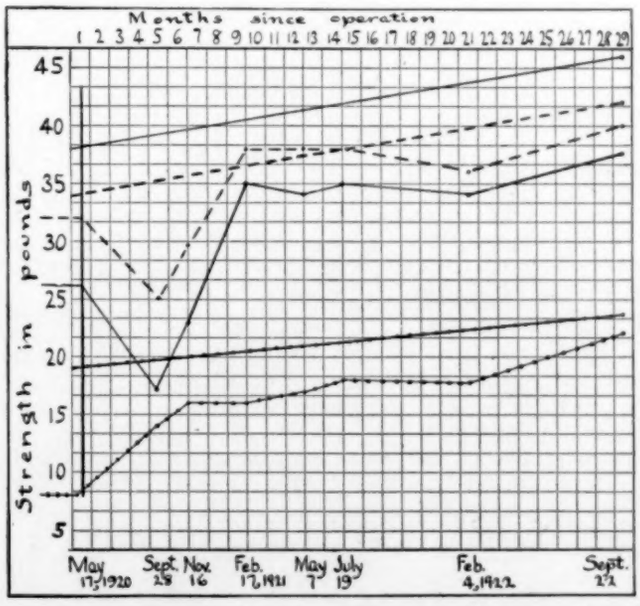

Fig. 3.—Postoperative gain of power in abduction in a case that showed a weakened gluteus medius—diminished power in abduction of the hip—with slight weakness in flexion and extension. Straight solid line, normal flexion; solid curve, postoperative flexion; straight broken line, normal extension; broken curve, postoperative extension; straight beaded line, normal abduction; beaded curve, postoperative abduction. The operation was performed, May 17, 1920.

medius, or whether it is the result of weakened lateral abdominal muscles. In the latter case, it will not be prevented by transplanting the tensor fasciae femoris to increase abductor power.

In suitable cases, beside the gain in abductor power and the improvement of the limp, I believe that the operation will give increased muscle support to the hip joint, and so tend to prevent the dislocations that frequently occur in cases of poliomyelitis with much involvement of the muscles around the hip.

535 Beacon Street.

OTITIC ABSCESS OF THE CEREBELLUM

REPORT OF CASE *

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Abscess of the cerebellum secondary to suppurative otitic disease is rare, but is of more frequent occurrence than is generally supposed. Not infrequently, cases of suppurative otitic disease in which intracranial complications are suspected, will reveal the presence of a cerebellar abscess on surgical exploration or at necropsy. The case here reported is of especial interest, (1) to show the difficulties in diagnosis (some cases will give few, if any, localizing signs); (2) because a cerebellar abscess was found on surgical exploration of the posterior cranial fossa, and (3) because the necropsy report was added to the clinical record, thereby making the case record complete.

REPORT OF CASE

History.—F. P., a man, aged 43, single, entered the Cook County Hospital, Jan. 29, 1922, with the diagnosis of influenza. His previous history revealed that he had had a chronic suppurative otitis media, involving the right ear, for the preceding eighteen years. The present complaint began two weeks before with headache, which was almost continuous and involved the frontal and occipital regions and was associated with earache. Two days before, he had had a very severe chill, which lasted twenty minutes. He stated that during the past two weeks he had had attacks of vertigo, which were associated with falling to the right, but unaccompanied by nausea or vomiting.

Examination.—The canal of the right ear was filled with cheesy material, together with a fetid serosanguineous discharge. No mastoid tenderness was present. There was marked stiffness and a tendency toward retraction of the neck. No pathologic reflexes were present. Blood pressure was 130 systolic and 85 diastolic. Blood examination revealed hemoglobin, 98 per cent.; red cells, 5,664,000; color index, 87 per cent.; white cells, 8,700. Urine examination was negative. Spinal puncture revealed fluid under increased pressure, and 20 c.c. was removed. It was turbid and globulin was strongly increased as shown by Pandy, Nonne and Ross-Jones tests. The cell count was 3,110 per cubic millimeter, with 96 per cent. polymorphonuclear and 4 per cent. small mononuclear cells. An intracellular diplococcus was occasionally seen, none being found with the Gram stain. The spinal and blood Wassermann tests were negative. At this time a diagnosis of epidemic meningitis was made, 35 c.c. of spinal fluid was withdrawn and 30 c.c. of antimeningococcic serum was given intraspinally.

January 30, the temperature was 99 F.; the pulse, 94, and respiration, 30. Another spinal puncture was made, and 40 c.c. of spinal fluid was removed. The fluid was under increased pressure; the cell count was 1,240 per cubic millimeter. Intracellular diplococci were not found. Culture of the spinal fluid revealed a gram-negative bacillus, which was probably due to contamination. Thirty cubic centimeters of antimeningococcic serum was given intraspinally.

January 31, the patient's mentality was clear. The neck was more rigid, and the Kernig sign was bilaterally present. There was tenderness over the right mastoid. A roentgenogram of the right mastoid was cloudy.

The patient was examined by Dr. Sidney Strauss, who reported that the stiffness of the neck and findings in the spinal fluid pointed to a meningitis. The absence of cerebral symptoms and leukocytosis, with the low temperature, left the etiology in doubt. The possibility of tuberculous meningitis had to be considered.

Functional tests disclosed deafness of the right ear; in the Weber test the sound was lateralized on the left; the Rinne test was negative, and the Schwabach test revealed diminution. The caloric test showed that the right labyrinth was functioning, but was impaired.

In consultation with Dr. Sidney Strauss, it was decided to explore the right mastoid region. This revealed a very dense, sclerotic mastoid, the only cell found being the antral cell. This was undoubtedly an example of arrested development of pneumatization of the mastoid. The lateral sinus and the dura over the tegmen, on exposure, were normal. A radical mastoid operation without the plastic stage was done.

February 1, the temperature was 99; the pulse, 100. There was cervical rigidity, but no abnormal reflexes were present. The spinal fluid was cloudy, under increased pressure. Globulin tests were positive, and the cell count was 2,300.

February 6, drainage from the mastoid wound and external auditory canal was profuse. White blood cells numbered 14,400. The condition was much improved. The temperature was 99.8 F. The spinal fluid was clear; the cell count, 510, the cells being mostly polymorphonuclear. Globulin tests were negative.

February 8, the temperature was 98.4 F.; the respiration, 22; the pulse, 84. The condition was improving; drainage was considerable. The spinal fluid was under moderately increased pressure and turbid; globulin tests positive. The cell count 1,880 per cubic millimeter.

Examination by Dr. Hassin revealed that mentality, the cranial nerves, reflexes and sensibility were normal. There was nystagmus on looking to the right. Rigidity of the neck, Brudzinski, and Kernig signs were absent. Neurologic examination did not reveal any involvement of the brain or meninges. The only indication of meningeal involvement was the turbidity of the spinal fluid, and this might well have been due to a focal irritation. Functional hearing tests revealed complete absence of function of the cochlear and vestibular branches of the eighth cranial nerve. The patient did not hear tuning forks or the Galton whistle with the right ear. Douching the right ear with cold water at 68 F. for four minutes failed to give any definite response. There was spontaneous nystagmus to the right; on looking toward the left, there was slight diagonal nystagmus to the left. Examination of the ocular fundi was negative.

February 16, the temperature was 99 F., the pulse, 88. The general condition had not changed. Reexamination by Dr. Hassin revealed that there was involvement of all the peripheral branches of the right facial nerve. The right corneal and conjunctival reflexes were diminished. There was slight deviation of the tongue to the right. No sensory facial disturbances were detected. The mental condition was fair. Muscle power was good. There was probably pressure on the seventh, twelfth and fifth nerves at the point where they leave the pons. Exploration for an extradural abscess was advised.

February 17, the temperature was 98 F., the pulse, 72. The pulse became as low as 60 and the patient very stuporous. There were no neck rigidity and no additional palsies.

Operation.—The right cerebrum and cerebellum were explored for brain abscess. The tegmen tympani and antri being exposed, a brain searcher was inserted into the temporosphenoidal lobe with a negative result. The searcher was then introduced posteriorly to the lateral sinus, inferiorly enough to enter the posterior fossa, and inserted in the direction of the internal auditory meatus. This resulted in locating an abscess in the right lobe of the cerebellum from which about 15 c.c. of thick, greenish yellow, fetid pus was evacuated. Gutta percha and gauze drainage was established.

February 18, the temperature was 100 F., the pulse, 80. The patient did not regain consciousness, and died in coma.

* From the otolaryngologic service, Cook County Hospital.

Anatomic Diagnosis.—This was: suppurative otitis media; recent surgical incision of the skin behind the right ear; part of the temporal bone (mastoid operation) missing; abscess of the right lobe of the crebellum; hyperemia of the cerebellum; traumatic perforation of the right temporal lobe (exploratory operation); turbid spinal fluid; marked hyperemia and edema of the brain.

Bacteriologic examination of the spinal fluid removed at necropsy revealed a pure culture of hemolytic streptococci.

Histopathologic examination of the temporal bone by the pathologist, Dr. W. B. Moody, did not reveal any apparent pathologic changes in the labyrinth.

COMMENT

At the time of the first exploration of the mastoid region, when no pathologic condition was found sufficient to account for the sympathetic meningitis, it was a serious mistake not to explore the middle and posterior cranial fossae for the presence of a brain abscess. Had exploration of the cerebellum been made at that time, the fatal result might have been avoided, since seventeen days elapsed between the first operation and the finding and drainage of the cerebellar abscess. This case serves to emphasize a statement made in a recent article: [1]

> The presence, and especially the persistence, of a sympathetic meningitis, when there is associated an otitic focus of infection, in the absence of sinus thrombosis, perisinuous abscess or extradural abscess, denotes the presence of some intracranial suppuration, as subdural abscess or cerebral or cerebellar abscess, and calls for an immediate operative exploration of the middle and posterior cranial fossae.

The clinical course subsequent to the first operation misled us into believing that the patient was getting better, and thereby too long postponed the second operation.

This case also serves to emphasize the point that cases in which there is more or less complete arrest of pneumatization of the temporal bone are especially predisposed to the development of suppurative intracranial complications. It also illustrates that sympathetic meningits may be the precursor of diffuse suppurative leptomeningitis. The history of vertigo, with falling to the right, should have suggested at least the possibility of a right cerebellar lesion.

In conclusion, I might point out that this was a metastatic abscess of the cerebellum, as the result of a hematogenous infection from the middle ear, by way of the general circulation.

25 East Washington Street.

1. Yerger, C. F.: Meningitis of Otitic Origin, J. A. M. A. **79**: 1924 (Dec. 2) 1922.

Gold and Oxygen.—Gold is unquestionably a very useful metal to man; it is the sign of riches, of the savings amassed by labor. Coined into money, it passes from hand to hand and is good in all exchanges, in all commercial transactions. It is a splendid part to play, I admit; but if gold were to disappear entirely from the earth, what would happen? Nothing very serious. Banks might be inconvenienced, commerce upset for a little while, but that is all. The world would soon move on as before. Suppose, on the other hand, one of these three metalloids, whose names you have just learned—oxygen, for example—should disappear. Immediately everything on earth would die, from the biggest animal to the tiniest worm; all plant life would perish, from the giant of the forest to the smallest thread of moss. Life would henceforth be impossible and this inhabited globe become a gloomy solitude, with man, animal, and plant forever banished. That as you see, would be a far more serious disaster than the inconvenience of a banker or the vexation of a merchant.—Fabre: The Wonder Book of Chemistry.

SPECIFIC TREATMENT OF HAY-FEVER DURING THE ATTACK

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The present treatment of autumnal hay-fever consists in graded prophylactic inoculations of that pollen extract to which the patient is most sensitive, at weekly or more frequent intervals, from the latter part of May until the onset of the pollen season. The inoculations are then discontinued. In a certain percentage of patients so treated, there ensues either complete freedom from hay-fever or great amelioration of symptoms. A not inconsiderable proportion, however, experience little or no improvement, and a few apparently develop more severe attacks than in the years in which they received no prophylactic treatment.

In those cases showing little or no improvement, Walker [1] states that pollen extract injections may be continued, but in smaller amounts, given at the same intervals (from five to seven days). He finds that in some cases the symptoms are made worse by the injection of pollen extract during the hay-fever season.

MacKenzie [2] has reported slightly better results in prophylactic treatment by combining with the parenteral administration of the pollen extract local instillations on the nasal mucosa, in gradually increasing concentration.

Even then, there are many patients experiencing little or no improvement. It is with the latter refractory group that this report has to deal.

REPORT OF CASES

CASE 1.—Miss R., aged 21, seen, June 16, 1922, had had hay-fever for the preceding four years, with onset about the middle of August and continuing until the first frost. At the age of 11, she had suffered recurrent attacks of asthma, which she believed she had only in the summer months. This condition had existed for only two seasons, and there had been no recurrence. In 1920 and 1921, the patient had received prophylactic hay-fever inoculations, but she had never been tested for sensitization by the cutaneous reactions.

From the routine examination, the diagnosis of (1) hay-fever and (2) nonorganic cardiac murmur was made. The patient reacted very strongly (four plus) to short ragweed and to daisy, mildly to sunflower (two plus), very mildly to giant ragweed (one plus) and negatively to the remainder of the pollen proteins with which she was tested. She was next tested with various dilutions of short ragweed, and gave a distinct reaction with dilutions as high as 1:10,000. Prophylactic inoculation with short ragweed was commenced, June 16, and the routine recommended by Walker was strictly followed. June 29, daily nasal sprays were started, and continued according to the procedure described by MacKenzie. July 31, the patient gave a negative reaction to short ragweed in a dilution of 1:5,000, and a very mild reaction to a dilution of 1:1,000. Two days later, she developed a typical attack of severe hay-fever. She was visiting in Massachusetts at the time, and the symptoms persisted until her return to Richmond, August 14, when they rapidly subsided. The patient remained symptom free until August 24, when she again became ill with a typical severe hay-fever. The eyes were swollen nearly shut, with a semipurulent secretion, and there was much sneezing, hydrorrhea and malaise. The patient was immediately started on daily subcutaneous inoculations of 0.25 c.c. of a ragweed pollen extract containing 10 mg. of protein nitrogen per hundred cubic centimeters. After three days, the symptoms improved definitely, and by

1. Walker, I. C.: Frequent Causes and Treatment of Seasonal Hay-Fever, Arch. Int. Med. **28**: 71 (July) 1921.
2. MacKenzie, G. M.: Desensitization of Hay-Fever Patients by Specific Local Applications, J. A. M. A. **78**: 787 (March 18) 1922.

August 30 she was entirely free from symptoms. Daily inoculations of the same amount were continued until September 8, when the patient left town for a period. Treatment was discontinued at that time, and she remained symptom free.

CASE 2.—Miss V., aged 36, a schoolteacher, seen, June 9, 1922, had had autumnal hay-fever for thirty-one years. Usually, the disease had been accompanied by mild asthmatic attacks. Diagnosis was made of (1) hay-fever and (2) gingivitis. The patient gave a four plus reaction to short ragweed, two plus to daisy and sunflower, one plus to orchard grass, and questionable reaction to giant ragweed and timothy. She reacted negatively to corn pollen, goldenrod, walnut and willow. When tested with dilutions of short ragweed, she gave a very mild reaction to 1:5,000, and none to 1:10,000.

Treatment was started, June 15, and administered both hypodermically and by nasal spray, as described in Case 1. July 15, the skin tests revealed little diminution in sensitization. August 22, the patient had three or four sneezing spells with a little cough and a very mild conjunctivitis. The extract was discontinued. No special treatment was given, and after three days, symptoms subsided entirely. September 1, the patient moved into another apartment and worked all day in a dust laden atmosphere. She began to sneeze immediately, and for four days had mild symptoms of hay-fever, with sneezing, coryza and conjunctivitis. September 6, daily inoculations in the amount given in Case 1 were started. These were continued until September 16. The patient improved after the first treatment, and remained symptom free throughout this period. Inoculations were then discontinued for two days, with return of mild symptoms. Daily injections were again instituted with double the dose, again with almost immediate improvement. September 23, the patient was doing splendidly, and inoculations were reduced in frequency to every third day. This was continued until October 3, when treatment was discontinued entirely. The patient remained symptom free throughout the remainder of the hay-fever season, during which time several of her friends who were suffering from the same disease continued with their typical symptoms.

CASE 3.—Mr. B., aged 30, seen, June 27, 1922, was given tests with the various pollens. He gave a four-plus reaction to short ragweed, and a two plus reaction to giant ragweed, daisy and corn pollen. Reaction to short ragweed in a dilution of 1:10,000 was strongly positive. Treatment was given as in Cases 1 and 2, and, July 31, he gave a negative reaction to a 1:5,000 and a mildly positive reaction to a 1:500 dilution.

With the onset of the pollen season, August 20, the patient had three days of severe symptoms, with subsequent complete recovery. Inoculations were discontinued, but through a misunderstanding the patient continued using his nasal sprays in a concentration of 10 mg. of protein nitrogen per hundred cubic centimeters. About September 1, mild symptoms recurred, and the spray was discontinued. Symptoms persisted for a week, when daily inoculations of 0.25 c.c. were started. Improvement was noted within twenty-four hours, and continued steadily until, after five days, all symptoms had disappeared except that the nose was stopped up a little at night, though not sufficiently to interfere with sleep. The patient stated that he sneezed on an average once or twice in twenty-four hours. Daily inoculations of 0.25 c.c. were continued until September 19, throughout which time the patient remained symptom free. Treatment was then discontinued, without recurrence of symptoms.

CASE 4.—B., a schoolboy, aged 14, first seen, Sept. 2, 1922, was suffering from a typical severe attack of hay-fever, his first attack. There was nothing noteworthy in the history other than that he had had a tonsillectomy one month previously. The patient's father, who was a physician, had sent him to two internists, who reported that they could do nothing other than give him symptomatic treatment, but suggested that the patient could probably be immunized against an attack next year.

He gave a three plus reaction to short ragweed, two plus to goldenrod, and one plus to daisy. Because of the apparent success in the first case described, I considered it worth while to attempt daily inoculations of small amounts of ragweed pollen extract. Daily injections were started with 0.25 c.c., containing 10 mg. of protein nitrogen per hundred cubic centimeters. The treatment was continued at home by his father, and, September 9, he reported the condition greatly improved. Daily inoculations were continued for a few days longer, after which they were decreased to every second day, later to every third day, and finally discontinued, the patient remaining greatly improved, according to his father's report.

CASE 5.—Dr. S., aged 33, seen, Oct. 17, 1922, for the preceding two weeks had had his first attack of hay-fever. He noted that immediately on leaving the Shenandoah Valley on his way to Richmond, the symptoms subsided. With the exception of the local condition, nothing noteworthy was observed in the physical examination. Cutaneous tests with the various pollen proteins were made, and the reaction was found negative to all except corn pollen.

The patient was advised to remain for a few weeks in a locality in which he would be free from symptoms. This being impossible, he returned home. Symptoms immediately recurred, and daily inoculations were instituted with complete relief after the second dose. Immediately on the termination of treatment after the first heavy frost, symptoms returned and persisted until inoculations were recommenced. Injections were now reduced in frequency to every second day, then to every third day, and around the end of November were discontinued, with no return of the trouble.

The long persistence of the attack in this case is readily explained by the extreme mildness of the winter, such that until the end of November, the farmers were able to continue their work in fields and barns. In the rural community in which the patient lived, there was undoubtedly sufficient dust from corn to cause reaction.

The patient has remained symptom free until the present time, with the exception of the last week in December, when he had three or four days of rhinitis, with sneezing, conjunctivitis, etc. This followed the eating of some corn.

SUMMARY AND CONCLUSIONS

In three cases of autumnal hay-fever with sensitization to short ragweed, the patient had been desensitized by the routine commonly followed, both parenteral injection and nasal instillation being employed. One patient developed hay-fever in a very severe form; while two were decidedly improved but not symptom free, after the onset of the pollen season. In all three cases, symptoms cleared up almost entirely following daily subcutaneous injections of small amounts of ragweed pollen extract.

A fourth patient, a boy who had developed hay-fever for the first time and had had no preventive inoculations, did equally well following daily subcutaneous treatment. The frequency of inoculations was gradually reduced in this case, the patient remaining greatly improved.

A similar case is reported, with sensitization to corn pollen.

If we may assume, from our meager knowledge of the immunology of this disease, that relief of symptoms following preventive inoculation is due to an increased tolerance (as in morphinism) rather than a true immunization, and that the condition resulting is one of so-called antianaphylaxis, the daily administration of small amounts would appear to be a more logical procedure than the giving of larger amounts at much longer intervals.

During the pollen season, the nasal mucosa is bearing the brunt of the allergic reaction. The administration of pollen elsewhere, as through the skin, would theoretically distribute the reaction throughout the other tissues, thereby relieving to some extent the intensity of the local reaction.

In the method of treatment suggested, those patients who have not been improved by prophylactic treatment may become either greatly improved or symptom free by continuation of the treatment during the pollen season.

According to the method proposed, patients presenting themselves for the first time during the pollen season, and without previous treatment, may be treated by specific measures, with considerable hope of relief.

404 Professional Building.

CHILLS FOLLOWING TRANSFUSION OF BLOOD

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Transfusion of blood, when used with proper precautions, is a comparatively safe procedure; but when used indiscriminately and without proper consideration of technic and indications, blood transfusion can be followed by most serious complications, even by death.

The safety with which blood transfusion can be used in a variety of diseases is based mainly on Landsteiner's discovery of the blood groups. Landsteiner,[1] in 1900, demonstrated that human beings and certain animals can be classified in three different groups. A fourth group was added by Jansky[2] in 1907. This work of Landsteiner is the foundation underlying the modern development of blood transfusion.

As compared with the preliminary testing of donor and recipient, the technic of blood transfusion, i. e., the method to be applied in a given case, is of minor importance. Any method (syringe, stopcock, paraffinized glass cylinders, sodium citrate) is applicable, provided it is possible to measure exactly the amount of the transfused blood.

THREE FACTORS IN POSTTRANSFUSION CHILLS

In spite of the fact that blood transfusion, when properly applied, is void of danger, the posttransfusion chill is an unavoidable and sometimes very unpleasant sequel to transfusion. Posttransfusion chills are encountered in a considerable number of cases, no matter what method is used. In an attempt to analyze these chills in order to avoid them, or to reduce their number and severity, three factors must be considered: (1) tests; (2) methods of transfusion, and (3) the condition of the patient.

1. *Tests.*—It is of the utmost importance that the tests be performed with expert precision. The interpretation of the tests is usually simple. However, in some cases it requires extensive experience to reach proper conclusions as to the compatibility of the tested bloods. The importance of this point is best illustrated by the results reported by Lindeman.[3] In 1914, he reported 150 transfusions by his syringe-cannula method with 33 per cent. of chills. He had performed all the transfusions himself, but the tests had been made by different men. By supervising all the tests personally, he was able in 1916[4] to report 146 transfusions with only 9 per cent. of chills. The best results are obtained by the direct matching of the blood of the donor and the recipient. Group matching, though very popular on account of the ease of execution, is not as accurate, and is apt to be followed by a larger number of chills.

The recipient must again be tested, if the transfusion is to be repeated. The fact that a recipient may change his group after a transfusion was first observed by Libman and Ottenberg.[5] Lately, Astrowe[6] has called attention to this very important fact, which is not generally known. It is of the utmost importance in the avoidance of chills and other more serious complications.

Eden[7] has proved that the blood grouping of a patient may be temporarily changed after the administration of certain drugs (quinin, antipyrin, etc.) and after an anesthetic. The curious effect of anesthesia on blood grouping was observed independently by Levine and Segall.[8]

2. *Technic.*—In considering the different methods of blood transfusion, with regard to posttransfusion chills, it must be stated that the number of chills is much more dependent on care in technic than on the choice of method. Whatever method is used, chills will be encountered in a fairly large percentage of cases, unless the strictest adherence to careful technic is observed.

It has been stated that the sodium citrate method of blood transfusion, which I[9] introduced in 1915, was followed by too many chills, as compared with other methods. Nevertheless, study of the literature on this subject gives evidence that the percentage of chills is about the same for all the different methods. Meleney, Stearns, Fortuine and Ferry,[10] comparing the Lindeman syringe method with the citrate method, found no difference in the frequency of chills. Ravdin and Glenn[11] encountered as many chills with the paraffinized glass cylinders as with the sodium citrate method.

The syringe stopcock method of Unger,[12] according to the records of Mount Sinai Hospital for 1922, was followed by more chills than the sodium citrate method (see below).

The question of the number of chills which follow the different methods of blood transfusion cannot be answered by the results of those who have become expert in one particular method. They are apt to have a special skill with this method, which will automatically reduce the number of chills. Thus, Lindeman,[13] in 1919, reported 214 consecutive transfusions without a chill, whereas, in 1914, he had encountered 33 per cent. of chills in 150 transfusions. While Lindeman attributed his remarkable results to careful supervision of tests, I think that the improvement of his technic was a contributory factor.

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11. Ravdin, I. S., and Glenn, E.: Transfusion of Blood, with Report of 186 Transfusions, Am. J. M. Sc. **61**: 705 (May) 1921.
12. Unger, L. J.: A New Method of Syringe Transfusion, J. A. M. A. **64**: 582 (Feb. 13) 1915.
13. Lindeman, Edward: Blood Transfusions Without a Chill by the Syringe-Cannula System, J. A. M. A. **72**: 1661 (June 7) 1919.

The sodium citrate method, because of its simplicity, was used by members of the attending and house staff of the hospital, whereas other methods, because of the greater difficulty in technic, were performed only by specialists.

My statistics show a gradual rise in the number of chills following the citrate method. I did not encounter any chill among my first twenty-two transfusions given by this method. A small number of cases offers no proof. Horsley, Vaughan and Dodson [14] have recently advised the revival of vessel anastomosis, because they did not observe a chill among twenty-four cases. Similar results can be duplicated by any method. Thus, there is no reason to abandon the modern, more simple methods of blood transfusion.

From my records of transfusion, the vast majority of which were performed at Mount Sinai Hospital, I find that the percentage of chills among the first 129 citrate transfusions was 15. Among 200 transfusions, the percentage rose to 20, and among 365 transfusions, to 24. The citrate method, very soon after its introduction, was performed by different members of the attending and house staff. The figures, 20 per cent. and 24 per cent., respectively, represent results obtained by different men.

Most hospitals use one method to the exclusion of others, and are thus not able to compare results. At Mount Sinai Hospital we have fortunately been able to compare the results as to number of chills, etc., from transfusion of citrated with those of uncitrated blood. The citrate method and Unger's stopcock method were developed at this hospital; both methods are at present in use. Records of transfusions from Jan. 1 to Nov. 1, 1922, show that thirty-four citrate transfusions were followed by eight chills, and twenty-nine Unger transfusions were followed by ten chills. Thus, the citrate method yielded 23 per cent., and the Unger method 34 per cent. of chills. In other words, the percentage of chills after the Unger method was 11 larger than the percentage after the sodium citrate method. These transfusions were performed by members of the attending and house staff, and indicate the results obtainable in the hands of the average physician.

Careful technic is very important in any method of blood transfusion. The proper insertion of the cannula into the vein is of the utmost importance. If the needle is not inserted in the proper direction, if it strikes the vein at an angle to its longitudinal axis, the blood cannot flow rapidly, and small clots are apt to form. These, though minute, may cause chills.

Another cause for clot formation is the use of cannulas of small caliber. It is much easier to enter the vein with a small size cannula than with one of large caliber. Hence, the inexperienced surgeon selects a small cannula, which will prevent the rapid flow of blood from the donor into the glass jar.

Reasonable speed in using the citrate method is important, in order to avoid excessive cooling of the blood before it enters the recipient's vein.

Proper insertion of the cannula into the vein is as important in the use of uncitrated blood as with the citrate method. To insure the proper operation of the syringe stopcock methods (of Miller, Unger, Bernheim and others), both needles must allow an unobstructed flow of blood.

Small transfusions are less likely than large (from 800 to 1,000 c.c.), to be followed by chills. The blood of some donors is more likely to cause reactions than that of others.

Mellon, Slagle and Acree [15] publish results of experiments which suggest that reactions following intravenous injections might be lessened if the solutions (citrate, saline, etc.) were properly buffered. It is possible that a difference in the hydrogen-ion concentration of the blood as compared with that of the saline and citrate solutions may account for some of the chills which follow the Unger and citrate methods.

3. *Condition of the Patient.*—The frequency of chills after the transfusion of blood is dependent in a large measure on the disease for which the transfusion is performed. In looking over large series of transfusions, one is impressed by the fact that in certain conditions chills are rare, whereas, in others, they occur very frequently. For instance, in transfusion given to replace loss of blood volume consequent on profuse hemorrhage, chills are of comparatively rare occurrence. When transfusion is done in blood diseases such as pernicious anemia and purpura hemorrhagica, chills occur much more frequently. The most formidable chills were encountered when treating leukemia and acute sepsis. Experience has shown that in leukemia, as well as in acute sepsis, transfusion is useless as a therapeutic measure, and sometimes causes grave danger to the patient. For this reason, blood transfusion is strictly contraindicated in these conditions.

Unger [16] has published results of experiments and claimed that sodium citrate has a deleterious effect on the blood. He states that, according to his investigations, citrated plasma has anticomplementary power, and sodium citrate increases the fragility of the red blood cells, and decreases the phagocytic power of the leukocytes. Were Unger's experiments conclusive, the applicability of the citrate method would be limited to cases of hemorrhage. It could not be used either in diseases of the blood (pernicious anemia, purpura hemorrhagica, etc.) or in cases of subacute or chronic sepsis. In other words, its use would be strictly contraindicated in a great number of diseases, in spite of the fact that this method has been used in the treatment of these conditions, with excellent clinical results, for many years.

It was clear without further experiments that Unger's conclusions concerning the inhibitory action of sodium citrate on the leukocytes was erroneous; for in the Wright opsonic index determination, in which the phagocytic activity of the leukocytes is to be measured, leukocytes are collected in from 1.5 to 2 per cent. sodium citrate solution. This is ten times as strong as the percentage of sodium citrate used in transfusion.

The other two points claimed by Unger have been disproved by the recent work of Mellon, Hastings and Casey.[17] They state that the results of their experiments are, in the main, "diametrically opposed to those of Unger." They found no anticomplementary power in citrated plasma, and no deleterious effect either on the red or on the white blood cells. These results of Mellon, Hastings and Casey are in accord with clinical

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15. Mellon, R. R.; Slagle, E. A., and Acree, S. F.: Practical Applications of "Buffers," J. A. M. A. **78**: 1026 (April 8) 1922.

16. Unger, L. J.: Deleterious Effect of Sodium Citrate Employed in Blood Transfusion, J. A. M. A. **71**: 2107 (Dec. 31) 1921.

17. Mellon, R. R.; Hastings, W. S., and Casey, Gertrude W.: Observations on the Effect of Sodium Citrate on the Blood, J. A. M. A. **79**: 1678 (Nov. 11) 1922.

experience with the citrate method, collected from all over the world. Experience has proved that, other factors being equal, clinical results obtained by the citrate method are as good as those obtained when uncitrated blood is used in transfusion.

CONCLUSIONS

1. The number of chills which follow transfusion of blood can be reduced by proper blood tests, careful technic, and strict attention to the indications.

2. The percentage of posttransfusion chills is about the same, no matter what method is used.

3. In a series reported here, posttransfusion chills were encountered in 23 per cent. after the citrate method, and in 34 per cent. after the Unger stopcock method.

4. Mixture of sodium citrate with blood in the proportion of 0.25 per cent. does not affect the vitality either of the erythrocytes or of the leukocytes.

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Clinical Notes, Suggestions, and New Instruments

WEIGHT AS A ROUTINE TEST IN PREGNANCY: A PRELIMINARY REPORT

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Urinalysis was for many years the only routine test employed during pregnancy. Within the last decade, the value of blood pressure readings, previously rarely used as a special test, has been generally recognized. Both of these tests give valuable data; but I have found that the information gained from the routine recording of weight greatly enhances their clinical value, and I urge the addition of this third test in all prenatal work.

A survey of the literature reveals only a few articles since that of Gassner published in 1862. From two years' experience in recording weight as a routine test, I am convinced that Gassner's average gain of 3½ to 5½ pounds (1.6 to 2.5 kg.) a month during the last three months of pregnancy is excessive, and should be prevented through careful regulation of diet. Since the average loss of weight following delivery is between 15 and 20 pounds (6.8 and 9 kg.), it is obvious that, if a woman has a normal weight before pregnancy, her total gain should not exceed 20 pounds. If previously underweight, she may be allowed a somewhat greater gain, possibly as much as 30 pounds (13.6 kg.). There is evidence that an excessive gain is dangerous. The woman who is fat should be kept on a carefully limited diet, and she may actually reduce to the benefit of herself and the growing fetus.

Pregnancy is usually characterized by a stimulated metabolism and improved health. Some women show improved metabolism from the first weeks, but others, owing to nausea and vomiting, lose weight during the first three months. It is important to know the amount of this loss. An excessive loss is dangerous, and by careful handling can usually be prevented. Naturally, the woman who has lost considerable weight during the first trimester may be permitted a greater average weekly gain during the second and third.

The weight of the fetus at term depends to some extent on the food intake of its mother. The excessive weight of a newborn baby is a good indication that the mother ate immoderately during pregnancy.

The marked decrease of eclampsia in central Europe during the period of war rationing led us to realize that eclamptics are usually women who have gained weight rapidly during pregnancy. Is excessive eating one of the factors in the breakdown of the metabolism and the development of this toxemia? Careful regulation of the diet, checked by routine weight records, may give valuable information in this particular.

Since starting the routine weighing of pregnant patients, I have several times noted that during the week or the two weeks before the appearance of albumin, increase of blood pressure or gross evidence of edema, there has been an abnormal increase in weight. Edema as evidenced by pitting of the ankles or other parts of the body is a rather late manifestation of retained fluids. Weight records may thus show an early evidence of failure on the part of the excretory organs.

As a result of observation that albumin and an increased blood pressure usually follow sudden gains in a pregnant woman's weight, eliminative treatment and a strict limitation of diet is now ordered as soon as the sudden increase is noted, regardless of the blood pressure and urinalysis tests.

There are many logical reasons, as well as clinical evidence, to back the plea for the consideration of weight in conjunction with blood pressure tests and urinalysis as a routine measure during pregnancy.

141 Wisconsin Street.

ASTHMA DUE TO CAT AND DOG HAIR: A PERSONAL EXPERIENCE

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At the age of 6 years, my parents noticed that I had considerable difficulty in breathing. This was thought to be due to a pair of very large tonsils, which almost entirely closed the aperture in my throat. Tonsillectomy and adenectomy were performed at this time, but my dyspnea persisted and was then recognized as bronchial asthma. From this time, I suffered with frequently recurring attacks of more or less severity. I scarcely knew the meaning of a good night's sleep and, at times, I was unable to go to bed at all, but was forced to spend the night in a chair. Whenever I had a cold, which was very often, I was completely incapacitated. The inhalation of various asthma powders and cigarets gave me temporary relief, but no hope for a cure was held other than that I might possibly outgrow it.

My first real relief was obtained by a visit to Atlantic City. At the time, I was having a very severe attack; but my asthma left me immediately on arriving in Atlantic City, and I was completely free during the entire time I was there. When I returned home, my asthma came back almost immediately. This experience has been repeated innumerable times since then; my asthma invariably left me when I went to Atlantic City, and I remained free while there, with the exception of a few isolated attacks; but when I returned home, my asthma, just as surely, came back again. My physicians explained this on the assumption that the climate of Washington was unfavorable for my trouble. This assumption was later proved to be erroneous. In 1913 we moved to a new residence in the same neighborhood, and I was entirely free from asthma for a period of two years, though exposed to identical climatic conditions. In 1915, my asthma returned and was as bad as ever.

I took up the study of medicine, but was discouraged by my professors, who told me there was no cure for asthma. Examination of my heart, blood and urine gave negative results. My blood pressure was normal. Fluoroscopic examination of my chest was negative. I took potassium iodid, Hare's anti-asthmatic prescription, benzylbenzoate and other preparations internally, but with no results other than a gastro-intestinal disturbance.

I tried calisthenics, deep breathing, long walks, cold baths, sleeping outdoors, vegetarian diet, and fasting, but my asthma persisted in spite of all.

In an effort to obtain some relief from my suffering I resorted to osteopathy, then neuropathy, chiropractic and finally Christian science, but they all proved dismal failures.

In 1919, while an intern in the Atlantic City Hospital, I heard and read something about protein sensitization as applied to asthma. I obtained some twenty-five food proteins, with which I tested myself, but they all gave negative results.

When I returned to Washington, additional skin tests were made, and I gave a marked reaction to dog-hair protein. I then went to Philadelphia and was thoroughly tested out by

Dr. Sterling, who found me sensitive to dog-hair, ++; cat-hair, +, and horse-dander, ±. To all others I gave a negative response. Since, I have made innumerable tests on myself, with always the same results, thus convincing me of the absolute specificity of the tests.

The explanation of my case is simple. At our former residence we always had a number of cats, which were the cause of my asthma at that time. My two years of freedom in Washington, from 1913 to 1915, were due to the fact that we got rid of our cats when we moved. In 1915, some one gave us a dog, which started my asthma again as badly as ever. Going to Atlantic City merely meant getting away from cats and dogs. The few isolated attacks occurring in that city could be traced directly to intimate exposures to cats or dogs.

We got rid of our dog, and I treated myself with gradually increasing injections of dog-hair protein. Since then I have been entirely free from asthma.

After being a martyr to asthma for twenty-two years, I am now well.

1726 M Street, N. W.

REPORT OF A CASE OF ESSENTIAL PENTOSURIA IN BROTHER AND SISTER *

JACOB ROSENBLOOM, M.D., PH.D., PITTSBURGH

It will be recalled that two types of pentosuria[1] exist: (1) the alimentary type, characterized by the presence of optically active xylose or arabinose in the urine, which follows the ingestion of large amounts of pentose-containing foods[2] such as apples, cherries, plums, beets and leguminous vegetables, and (2) the idiopathic, or essential, pentosuria.

Salkowski and Jastrowitz[3] first described a case of essential pentosuria in a morphin addict who also occasionally excreted a trace of glucose. In this type of pentosuria, r-arabinose, an optically inactive pentose, is usually excreted. Janeway[4] was able to compile from the literature twenty-four of these cases up to the year 1906.

In the two cases of chronic pentosuria that have come under my observation, the patients were:

Mrs. A., Jewish, aged 30, who was told twelve years ago that small amounts of sugar were present in the urine. At no time has she had any symptoms of diabetes mellitus.

Mr. W., Jewish, brother of Mrs. A., aged 31, who twelve years ago was refused insurance on account of diabetes. At no time has he had any symptoms of diabetes mellitus.

In the accompanying table are presented the data showing that both of these patients are excreting pentose; and, as the urine is inactive, it is no doubt racemic arabinose that they are excreting.

In the literature it is well known that pentosuria is very common in Jews and is often found in families. The cases reported here are of this nature. The only other case of pentosuria I have observed is the case of a Jew, aged 63, who has had this condition for the last eleven years.

5070 Jenkins Arcade.

FINDINGS IN TWO CASES OF ESSENTIAL PENTOSURIA

Patient	Date	Benedict Test	Fermentation*	Osazone: Melting Point	Osazone: Nitrogen Content	Osazone: Distillate†	Bial Test	Polarization	Tollens Test for Glycuronic Acid	Quantity of Pentose, Gm.	Diet
Mrs. A.....	10/ 8/22	+	0	158°	17.02	+	+	Inactive	0	6.0	General
	11/ 9/22	+	0	159°	17.01	+	+	Inactive	0	6.4	Restricted carbohydrate
Mr. W.	11/ 8/22	+	0	158.5°	17.08	+	+	Inactive	0	4.7	General
	11/22/22	+	0	159.2°	17.00	+	+	Inactive	0	4.9	General

* After fermentation, the urine reduced Benedict's reagent as strongly as before fermentation, and also yielded an osazone. Urine containing pentose exposed to the air keeps its reducing power impaired, in distinction from glucose containing urine.

† Distillate applies to dissolving the osazone in warm water, adding excess of concentrated hydrochloric acid and distilling. The only substances in the urine that form furfurol under these conditions are the pentoses, glycuronic acid and glycuronates. These are distinguished from pentose by the fact that urine containing them rotates the plane of polarized light, gives a positive Tollen's test, and yields an osazone of different nitrogen content and melting point than does pentose. Furfurol is tested for in the distillate by Bial's reagent.

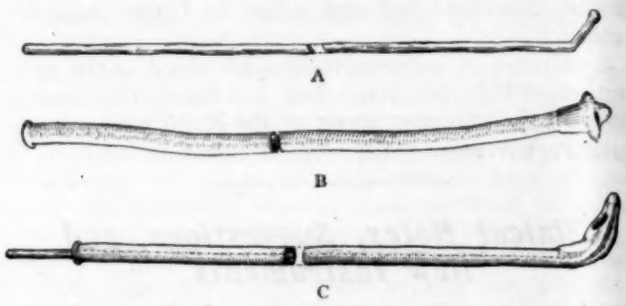
* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of bibliographic references. The complete article appears in the author's reprints.

1. Bendix: Die Pentosurie, Stuttgart, 1903. Neuberg: Ergebn. d. Physiol. **4**: 373, 1904. Garrod: Inborn Errors of Metabolism, 1909. Greenwald: Endocrinology and Metabolism **4**: 289, 1922.
2. Von Jaksch: Centralbl. f. inn. Med. **27**: 145, 1906.
3. Salkowski and Jastrowitz: Centralbl. f. d. med. Wissensch. **30**: 337, 1892.
4. Janeway: Am. J. M. Sc. **132**: 423, 1906. Kaplan: New York M. J. **84**: 233, 1906.

SIMPLE METHOD OF INTRODUCING A MUSHROOM CATHETER *

NELSE F. OCKERBLAD, M.D., KANSAS CITY, MO.

The mushroom catheter makes the ideal indwelling catheter. The usual introducers or obturators are not satisfactory in all cases. They work fairly well in a normal urethra, but in an exceptionally difficult, tortuous, prostatic urethra, they may fail. The method that I have used with much satisfaction is very simple. I once had occasion to introduce a mushroom catheter, but had no obturator with me. I had, however, a Walther ureteral bougie. I used the butt end of this, and slipped the catheter over it, and was successful in placing the catheter in the bladder. I used this on several occasions and found that it worked very well. Later, I encountered a tortuous prostatic urethra and found that the catheter would not make the turn.



A, solder wire obturator; *B*, catheter; *C*, catheter with obturator in place.

It then occurred to me that if I had some instrument that I could bend like a Coudé catheter, I could cause it to make the turn and slip by. I secured about 16 inches of ordinary solder wire, which is sold in every hardware store. A hot soldering iron was held against the tip, in order to produce a bead of flux. As soon as it was cool it became smooth and fitted in the tip of the mushroom catheter.

This obturator of solder can be molded to any desired shape, and has never yet failed to pass the most difficult urethra.

TECHNIC

First, the catheter and obturator of solder are sterilized in the usual manner, preferably by boiling. The urethra is then filled with a lubricant. Next, the obturator is introduced into the catheter, and a suitable bend is made at the tip. The catheter is stretched well over the solder obturator so that the mushroom head is elongated until flat. If the catheter will not enter readily, it is withdrawn, and another bend is made in it until the bend necessary to enter the prostatic

* Read before the Kansas City Urological Society, Dec. 16, 1922.

* From the Department of Genito-Urinary Surgery, University of Kansas School of Medicine.

urethra is found. The catheter is then released and permitted, by its own elasticity, to resume its normal shape. When this occurs, the mushroom head spreads out and takes hold on the internal urinary orifice. The solder obturator is then easily withdrawn. The method also works very nicely for introducing a mushroom catheter into the female urethra. I have used it for several months, and have not yet failed to pass a No. 20-22 or No. 24 mushroom catheter whenever I desired. This obturator may also be used to stiffen the ordinary soft rubber catheter during introduction for the purpose of draining the bladder in prostatic obstruction or spasmodic stricture of the urethra.

415 Argyle Building.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BACTERIAL ALLERGENS-SQUIBB (See New and Nonofficial Remedies, 1922, p. 247).

Bacillus Diphtheroid Allergen-Squibb: Prepared from the protein from *Bacillus diphtheriae.*

Staphylococcus Citreus Allergen-Squibb: Prepared from the protein from *Staphylococcus citreus.*

Bacillus Influenzae Allergen-Squibb: Prepared from the protein from *Bacillus influenzae.*

Bacillus Diphtheroid Allergen-Squibb, Staphylococcus Citreus Allergen-Squibb and Bacillus Influenzae Allergen-Squibb are prepared by the following method:

Seed tubes are inoculated from stock cultures, and seed agar bottles are inoculated from seed tubes. After twenty-four hours' growth, the seed bottles are examined for purity of culture, the bottles washed off with 0.4 per cent. cresol and physiological solution of sodium chloride. The contents are centrifuged and the liquor decanted. The organism is rewashed and centrifuged again. The organism is extracted with 0.2 per cent. sodium hydroxide solution, filtered and the filtrate is brought to the iso-electric point of the protein by the addition of hydrochloric acid. The purified bacterial protein is filtered off and dried with anhydrous acetone.

Bacterial Allergens-Squibb are white powders; insoluble in water, salt solution, or acid, but readily soluble in dilute alkali.

FOOD ALLERGENS-SQUIBB (See New and Nonofficial Remedies, 1922, p. 241).

Egg Yolk Globulin Allergen-Squibb: Prepared from the purified globulin of yolks of hen's eggs.

Horse Serum Allergen-Squibb: Prepared from the protein of normal horse serum.

The following method is used for the preparation of Egg Yolk Globulin Allergen-Squibb:

The washed yolks of fresh hen's eggs are completely extracted with ether, dissolved in a 10 per cent. solution of sodium chloride and dialyzed until the solution is free from salts. The precipitated globulin is filtered and washed with water. It is redissolved in a 10 per cent. solution of sodium chloride and the solution filtered. The globulin is again precipitated from the filtrate by dialysis, the precipitate washed with water and finally with anhydrous acetone and dried.

The product is a fairly yellowish powder, odorless and tasteless, soluble in dilute salt solution and insoluble in water.

The following method is used for the preparation of Horse Serum Allergen-Squibb:

The proteins from normal horse serum are precipitated by acetone and the precipitate is dried with acetone.

The product is a white powder, odorless, tasteless, partially soluble in water, more completely soluble in dilute alkali.

Observations on Intelligence.—The truest and most profound observations on intelligence have in the past been made by the poets and, in recent times, by the story writers. They have been keen observers and recorders, and reckoned freely with the emotions and sentiments. Most philosophers, on the other hand, have exhibited a grotesque ignorance of man's life and have built up systems that are elaborate and imposing, but quite unrelated to actual human affairs. They have almost consistently neglected the actual process of thought and have set the mind off as something apart to be studied by itself.—Robinson: The Mind in the Making.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 183)

[NOTE.—This is the fourth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

OVERFEEDING

In the normal breast-fed baby, overfeeding is not of frequent occurrence and is usually of temporary importance, except in very young and premature infants and in those infants fed by gavage. The condition is usually corrected spontaneously by refusal of the infant to nurse longer than is necessary to meet its needs. When the breasts remain unemptied, the milk secretion soon decreases. The temporary overfilling of the stomach is usually satisfactorily relieved by a regurgitation of part of the meal. There always remains some danger of the stomach's becoming accustomed to this tendency to reversed peristalsis. It is most commonly seen during the first weeks of life before the mother's breasts and the baby have become adapted to each other. Overfeeding in infants fed by gavage may lead to dilatation of the stomach when the food is too rapidly administered, and this may lead to grave symptoms.

ETIOLOGY

Too frequent feeding is the most common cause; less frequently, too prolonged feedings. Excessive quantities of milk from a free flowing breast are usually of temporary importance when the infant is nursed by the mother, but are more likely to be a factor when infants are nursed by a wetnurse, more especially when her breasts are kept active by the nursing of a second infant. Milk excessively rich in fat and sugar may lead to nutritional disturbances.

Ordinarily the stomach of a breast-fed infant empties itself in about two hours. The period between nursings during which the stomach is empty is one of considerable importance in that during this period, free hydrochloric acid is present. Besides its antiseptic properties, it assumes an important rôle in stimulating the secretion of pancreatic juice and bile, both of which have an important bearing on digestion. Too frequent nursings interfere with these normal physiologic processes. Excessive quantities of food, even at proper intervals, impose too great demands on the gastric mucosa. When the food contains excessive quantities of fat, gastric secretion becomes diminished.

SYMPTOMS

The earliest manifestations of overfeeding are regurgitation, anorexia, irritability and, not infrequently, diarrhea. Regurgitation occurs at first only occasionally, immediately after nursing, and without any discomfort on the part of the infant (spitting). The regurgitated fluid is often unchanged milk. This is usually the first premonitory symptom.

Diarrhea follows when overfeeding continues and regurgitation becomes insufficient to rid the body of excess food. This is especially true when the milk is

high in its fat and sugar content during the first weeks of life. The stools are more frequent than normal, and contain undigested particles of food. The irritating feces often cause intertrigo in the anogenital region.

In many cases no other symptoms develop, the condition undergoing a spontaneous cure. The breasts lessen their yield, and thus the cause of the condition disappears, or, on the other hand, the digestive power of the infant increases to such an extent as to be able to take care of the excess, if not too large. When, however, these disturbing factors are entirely neglected, the excess of the food continued, or even increased, owing to wrong interpretation of symptoms, then more serious symptoms develop.

Vomiting becomes habitual, occurring from a few minutes to half an hour after nursing. It is accompanied by visible discomfort and straining on the part of the infant. The vomitus consists of curdled milk, mucus and gastric juice. Between vomiting, there is often painful belching. The stomach shows distention, and empties itself only after three or four hours. Free hydrochloric acid is reduced or may be absent, the acid products of fermentation being present. The microorganisms are increased in number and variety, owing to stagnation and absence of antiseptic free hydrochloric acid.

The weight early becomes stationary; in severer cases, associated with diarrhea, loss of weight becomes marked.

DIAGNOSIS

There is great danger of making a diagnosis of overfeeding in infants sick from other causes. As previously stated, it is, on the whole, a rare condition in normal infants. In the presence of symptoms suggestive of overfeeding, positive diagnosis is made by determining the amount of milk taken by the infant, and comparing it with amount an infant of the same age and weight should get.

If, however, the food is found to be quantitatively correct, occasionally information of value may be obtained by examining the quality of the milk chemically, especially as to its fat and sugar content. The specimen for examination should be taken under precautions pointed out under "Examination of Human Milk." By making a proper etiologic diagnosis, valuable indications for rational treatment are obtained.

COMPLICATIONS

Pylorospasm and gastric dilatation are not uncommon in the neglected cases.

Diarrheal disturbances are accompanied by the milder evidences of intestinal irritation, such as colic, and more or less numerous bowel movements—acid and irritating, greenish-yellow, and containing numerous curds and much mucus. The buttocks soon become reddened, and intertrigo results.

Anhydremic intoxication, complicated by acidosis, while rare in the breast-fed infant, may result when the vomiting and diarrhea are neglected. The baby becomes drowsy and stuporous, pays little attention to its surroundings, and not infrequently develops an extreme anorexia.

In simple diarrheal disturbances, the intestinal findings dominate the picture, while in intoxication they share their prominence with the added nervous symptoms.

Eczema not infrequently results from overfeeding in the breast-fed infant, and is usually seen in the fat type of infant who is otherwise healthy.

Pyelitis is a frequent complication in neglected cases of diarrhea.

TREATMENT

The prophylaxis of this condition is of importance, and consists in giving the mother proper instructions as to the nursing, especially as to its frequency, and seeing to it that the rules covering the interval, number of nursings and time at the breast are observed. In wetnursing, more caution is necessary, especially in those wetnurses who have an abundance of milk, which is frequently the case in a wetnurse whose child is older then the infant nursed.

A very important point to impress both on the mother and on the wetnurse is the fact that crying of the infant is not always due to hunger, and that offering the breast should not be used as a means for quieting the child.

When the flow of milk is very free, it may be necessary to reduce the nursing period to even three to five minutes, it being a fact that most infants take about 75 per cent. of their entire meals in the first five minutes at the breast. It is always well at the beginning of such an experiment to weigh the baby after a two, three, five, ten and twenty minute period to ascertain the exact amount which the baby obtains from the particular breast which it is nursing, so that conclusions may be drawn as to the time it is to be left on each breast. If the short nursing periods with increased intervals do not result in a lessened secretion and relief of the symptoms, the milk should be expressed and fed by hand in measured quantities.

When the breast milk contains an excess of fat, this is most easily remedied by reducing the mother's diet as a whole and increasing her exercise and water intake.

When the infant shows evidence of gastric distention and retention, the treatment consists in emptying the stomach and bowels of the overload of fermenting food, and resting the digestive apparatus, both these objects being achieved by giving a bland diet, consisting of boiled water, or weak tea sweetened with saccharin, for twelve hours.

If vomiting continues, it is advisable to wash out the stomach with physiologic sodium chlorid solution or 1 per cent. sodium bicarbonate solution.

Irrigation of the bowel aids in removal of fermenting intestinal contents.

INTERCURRENT PARENTERAL AND ENTERAL INFECTIONS

Infections in the mother or infant may be the causative factors of nutritional disturbances. In the mother the most important are puerperal fever and sepsis, the acute infectious diseases, and local infections of the breasts. In the infant, infections outside the digestive tract, such as pharyngitis, tonsillitis, pneumonia, pyelitis and bronchitis, are classed as parenteral infections, and those of the intestinal tract as enteral infections.

SYMPTOMS

If the mother is ill, the clinical picture will vary, depending on whether the infant becomes infected by

the contact, or suffers only through a diminished food supply. Conditions in the mother which would justify weaning have been discussed.

In conditions following infections in the infant, the symptoms depend on whether the infection is local, systemic or confined to the intestinal tract. The clinical picture varies directly with the degree of disturbance of the metabolic function. As a rule, the enteral infections are more commonly associated with grave disturbance of the infant's nutrition. Parenteral infections also interfere with the processes of metabolism necessary to meet the nutritional needs. Undoubtedly, in many of these a secondary enteral infection results from ingestion of bacteria from the upper respiratory tract.

The diagnosis of the primary seat of infection in the infant is of considerable importance in deciding the method of treatment.

TREATMENT

Parenteral infections rarely call for restraint in administration of food because of the associated anorexia, and the infant should be nursed (if possible without danger to the mother) directly at the breast.

In the case of enteral infections, it may be necessary to withdraw the maternal milk and replace it by a short period of starvation, to be followed by small quantities of breast milk, taken directly from the breast during short nursings, or it may be best to feed small quantities of expressed milk to the infant at regular intervals.

Not infrequently it becomes necessary to feed these infants by catheter in order to sustain them. This method of introducing their food should be begun sufficiently early to avoid a catastrophe.

Under no circumstances should they be placed on food other than the mother's milk when the state of her health and the quality of her milk permit.

Inert fluids, such as water, weak tea, broths made from young meat and young fowls, and cereal decoctions, should be given between feedings to insure a sufficient intake of water, the infant's age permitting. A careful record should be kept of the twenty-four hour quantity of all fluids administered, in order to insure the child a sufficient water and food administration.

IDIOSYNCRASY TOWARD MOTHER'S MILK

The cases in which the mother's milk is totally unfit for the infant's use are exceptionally rare. More recently, considerably more attention has been given to the effect of the mother's diet on the quality and quantity of her milk secretion. The instruction so commonly given to the mother to the effect that she may eat whatever she likes has, in the light of more recent investigations, shown need for modification. The effect of the diet of the mother on the milk must be considered under two headings; first, what foods disagree with the individual mother to the extent of affecting the quantity of her milk supply. The mother will be the best judge as to what foods she herself finds it desirable to eliminate from her diet because of an undesirable effect on herself. More important, however, from the standpoint of food idiosyncrasy is the result following the eating of foods by the mother which she herself may relish, but which may have an undesirable effect on the child. It is well known that eggs, some cereals, fish and sea foods, certain meats, chocolate, and even cow's milk proteins, when ingested by the mother, may result in a sensitization of the infant.

The more recent work of O'Keefe[9] demonstrated the frequency of such a sensitization in eczema. Sixty-one per cent. of forty-one cases showed a positive reaction to one of the cow's milk proteins. Forty-one per cent. showed a positive reaction to one of the egg-proteins, two cases to oats, and one to wheat. About 20 per cent. of the positive cases showed a response to both milk and egg proteins. Apparent cure in about 20 per cent. more followed the omission or limitation in the maternal diet of one or more food proteins to which the infant was sensitive.

Talbot[10] reports a case in which a very severe eczema cleared up on the mother's discontinuing the eating of chocolate, and recurred on her again eating that food.

By a series of experiments, Shannon[11] was able to demonstrate that two infants under his care, who were suffering from urticarial skin lesions, had become sensitized to egg protein ingested by the mother. He in turn sensitized a series of guinea-pigs by the injection of the breast milk from these women, and was able to precipitate anaphylactic reactions by intrathecal injection, when eggs were added to the mother's diet.

Cases of Egg Anaphylaxis.—The grandmother of a patient presented no idiosyncrasy following ingestion of eggs, until the time of her first pregnancy, when during the fifth month she ate eight eggs in one day. Since that time, twenty-four years ago, she never has been able to relish eggs. Her first child was unable to eat eggs or anything containing eggs during her childhood, but during her later years she has been able to eat food containing a moderate quantity of egg. She has no children. Her second child, the mother of the patient, gave the same history, stating that she could detect the smallest quantity of egg in pastry, at the first taste. The patient had been a well infant until seen at 8 months, when it was still exclusively breast-fed, and had developed a severe diarrhea. For twelve hours it was placed on barley-water, with instructions to add the white of one egg to a pint of barley water during the subsequent twelve hours. It partook of 1 ounce of this mixture of barley water and egg albumin. Within thirty minutes, it became violently ill, with vomiting and purging, and shortly thereafter developed marked edema of the entire body. This lasted for six hours, when it receded spontaneously. When a slight abrasion was made with a Pirquet scarifier, and a drop of egg albumin was applied to the abrasion, a white wheal, one-half inch in diameter, developed within six minutes, continuing to increase in size for fifteen minutes, when it was surrounded by an erythematous area, 1 inch in diameter; throughout this erythematous area, numerous pin-head sized white elevations developed. The entire reaction disappeared in one and a quarter hours.

9. O'Keefe, E. S.: Eczema in Breast-Fed Babies, Boston M. & S. J. **185**: 194 (Aug.) 1921.
10. Talbot, F. B.: M. Clin. N. Am. **1**: 985 (Jan.) 1918.
11. Shannon, W. R.: Demonstration of Food Proteins in Human Breast Milk by Anaphylactic Experiments on Guinea-Pigs, Am. J. Dis. Child. **22**: 223 (Sept.) 1921.

Quack Plague "Doctors."—Some of the most noisy detractors of our work were the native quacks who persisted in beguiling the public as to their ability to cure the disease. When patients came with fever and cough, they always gave hopeful prescriptions. If the sickness was not infectious, the patient got well and the quack's reputation jumped skyward; should it turn out to be true plague, both patient and quack often died. In Harbin alone, we recorded seven deaths among the old-style practitioners; one was the "vice president of the medical research society" whose body was thrown out into the street by his wife in order to escape isolation of the family. At Dalainor one quack after catching the disease passed it on to his wife and four children. None survived. —Reports: North Manchurian Plague Prevention Service, 1918-1922.

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SATURDAY, JANUARY 27, 1923

LEUKOCYTIC SECRETIONS

It is perhaps unfortunate that the routine counting of the colorless corpuscles of the blood, which has become an every-day procedure in clinical medicine, has tended to focus attention so effectively on the numbers of these cells and thereby to overshadow the functional importance that they unquestionably possess. The leukocytes have long been recognized as independent and structurally typical cells, which are usually very much "alive" so that they may respond to their environment with motile as well as chemical reactions. Their motility, as expressed in the familiar ameboid movements of the white cells of the blood, by virtue of which they can penetrate vascular walls and permeate various tissues, has attracted great interest, particularly in view of the fact that such corpuscles can ingest foreign particles, including bacteria. This performance is, of course, the basis of the phagocytic theory of immunity so ardently championed by Metchnikoff. In phagocytosis a single, unattached cell carries out a sort of intracellular digestion that is characteristic of the lowest forms of animal life. In the latter a single cell is obviously called on to perform all necessary functions; but, in the course of evolution, when the body becomes more and more a "community of many cells," a division of labor takes place which is expressed morphologically in the differentiation of tissues and the adaptation of certain types of tissue cells to specialized activities. Apparently, as Zinsser has pointed out, the leukocytes have retained the primitive abilities of the more independent cells of the lower forms, perhaps as a provision against certain emergencies. At any rate, it is all too rarely recalled that, in addition to ingesting and digesting bacteria, the phagocytes may help to clean up the débris of residual cells of all sorts, such as extravasations of blood that occasionally accumulate, so that it would seem as if the scavengers preserved their primitive characteristics for definite physiologic purposes, and were by no means always associated, as is often tacitly assumed, with the defense against infectious disease.

Besides removing foreign organisms and necrotic tissue by phagocytosis, the leukocytes have been charged with further responsibilities for which, however, the evidence is by no means so clearly marshaled. A generation ago it was customary to ascribe to them a function in the absorption and transport of foodstuffs from the intestine. On this basis the so-called digestive leukocytosis, or increase in the number of white cells in the blood after meals, was explained. It now seems far less likely, if not actually improbable, that fats and proteins require leukocytic intervention for their absorption. The leukocytes have also been assumed to be concerned with the supply of the plasma proteins and to take an important part in the as yet little understood mechanisms of blood coagulation. From this standpoint, as Howell [1] has expressed it, they might be regarded as unicellular glands, the products of their metabolism serving to maintain the normal composition of the blood plasma. The formation of granules within the substance of the eosinophils offers, he adds, a suggestive analogy to the accumulation of zymogen granules in glandular cells.

In an analogous vein, Carrel and Ebeling [2] have interpreted leukocytes as motile unicellular glandular structures which set free their secretions in the humors of the body. Through the splendid device of producing pure cultures of leukocytes—a procedure in which Carrel's laboratory at the Rockefeller Institute for Medical Research in New York has taken a large initiative—it has at length become possible to study the products of leukocytic metabolism with less contamination from unrelated materials than is possible when the more complex tissue extracts must be employed. Attention has already been directed to Carrel's evidence [3] of the presence of growth-activating substances in leukocytes, and of the setting free of these substances in the tissues and fluids in which leukocytes accumulate. Leukocyte extracts increase the rate of multiplication of fibroblasts in vitro, and this property is acquired by peritoneal exudate or connective tissue invaded by leukocytes. In this respect there is a resemblance to embryonic tissues which also yield substances that stimulate cell proliferation. Carrel and Ebeling [2] have even more recently found that leukocytes, cultivated in plasma, always secreted substances which increased the rate of growth of homologous cells. Less frequently, they set free substances which hemolyzed foreign erythrocytes. The latter is a typical immunity reaction. The growth-promoting substances, in the words of Carrel and Ebeling, are analogous to those contained in embryonic tissues, and probably represent some of the nutriment brought to fixed tissue cells by leukocytes. They may possess the function of rejuvenating cells which have ceased to multiply when

1. Howell, W. H.: Textbook of Physiology, Ed. 8, Philadelphia, W. B. Saunders Company, 1921, p. 442.
2. Carrel, Alexis, and Ebeling, A. H.: Leukocytic Secretions, J. Exper. Med. **36**: 645 (Dec.) 1922.
3. Carrel, Alexis: Growth Promoting Function of Leukocytes, J. Exper. Med. **36**: 385 (Oct.) 1922.

the cicatrization of a wound or the repair of a fracture requires a resumption of tissue activity. According to this hypothesis, the leukocytes brought to the surface of a wound by the process of inflammation would not only oppose bacterial invasion, but also bring to the tissue the material necessary to cell multiplication. To this extent one may follow the conclusions and analogies now demonstrated for the secretions of the leukocytes as well as for the extracts of their bodies. It calls for far greater belief, however, in accepting the further assumption, namely, that the inhibiting action of blood serum in old age may be due partly to a reduction in the amount and activity of the substances secreted by leukocytes and tissue cells in the humors of the organism.

EFFICIENCY IN MEDICINE

In addition to the many profound changes in the living conditions of mankind which the World War served to bring about, the exigencies developed by the great conflict have helped in a large way to emphasize the possible significance of efficiency and organization in the conduct of human affairs. Prior to the war, considerable attention had already been devoted to the subject of industrial management, and the "system" introduced by Taylor and his followers had been widely introduced into the world of business. With the advent of the struggle between nations for supremacy, the need of conserving the health and workin gefficiency as well as increasing the work output of the individual was strongly emphasized. Everywhere the preservation of man power and the promotion of its functions became a part of the win-the-war program. Science was applied to the study of industry on a scale never before attempted. Industrial physiology became an expression to conjure with. Hand in hand with investigation of shop management went the examination of the hygienic conditions for work and the problems of fatigue in relation to the work output. Now that the stress of immediate need is no longer so imminent, it is becoming more evident that the welfare of the worker is involved not only in the day's work but perhaps also in the prolonged continuance of forms of labor that may alter unfavorably his physical or sociological welfare in the long run rather than for the time being.

To review the manifold questions here at stake would be tantamount to describing the entire scope of the new industrial hygiene. It was said recently that impoverished nations, of which there are today numerous instances—nations dependent on the fruits of labor rather than on the wealth of nature for their existence—are bound to promote the working capacities of their peoples in the direction of vigor and rational efficiency, in order to survive. In the attempts to promote such ends, physicians and the medical sciences have taken an important part. They have sought and taught the possible dangers to health, as, for example, in averting occupational disease and preventing child labor; they have aimed to ascertain the personal fitness of individuals for special tasks, under the water, on land and in the air. Morbidity and mortality are only a portion of the considerations that engage the attention of the medical profession. Man is to be regarded not merely as a machine but also as a personality which must "carry on" in many directions.

It appears somewhat strange that, in this era of standardization, medicine itself has been so little altered as an art and a profession. Dürig,[1] the Viennese physiologist, asserts that in almost no other department of technical work have the tools been so little standardized as they have been in practical medicine. Consider, he says, the possible and impossible forms of the stethoscope; the various models of apparatus for electrotherapy and heliotherapy; the continually changing types of hemacytometer; the almost innumerable sorts of instruments for operative procedure for which every surgeon seems to delight in devising a form which no one else is trained to use; the manifold drugs of uncertain therapeutic worth. Assuredly, the waste of human energy in becoming adjusted to such a situation is not inconsiderable. Would it not be possible and even highly advantageous to adopt a greater uniformity, as happens in other vocations, without sacrifice of skill or dignity?

It shall not be denied that any tendency to detract from the possibility of individual initiative and ingenuity is to be strongly deprecated in any field of endeavor, and particularly in medicine, in which each case presents a more or less personal problem. "Leadership," Hoover[2] has written, "is a quality of the individual. It is the individual alone who can function in the world of intellect and in the field of leadership. . . . Salvation will not come to use out of the wreckage of individualism. What we need today is steady devotion to a better, brighter, broader individualism—an individualism that carries increasing responsibility and service to fellows."

Dürig, too, well realizes the importance of conserving the resourcefulness of the individual. The work of man must not be converted into machine-like performance. However, in the pressing daily tasks of medical practice there is much that can be and is being "standardized" with advantage rather than detriment. Conservation of time and energy through better systematized routine and equipment in office work, hospital or laboratory leaves a larger proportion of the inexpansible twenty-four hour day at the service of the individual. Lack of orderly conduct in any vocation, disorder and chaos in professional surroundings, are not evidences of personal originality. Even the musical instruments used by great artists are standardized. The essential question is whether there is not still a

1. Dürig, A.: Das Taylorsystem und die Medizin, Wien. med. Wchnschr., 1922.
2. Hoover, Herbert: American Individualism, New York, Doubleday, Page & Co., 1922.

large opportunity for conservation through system in the work of most practitioners.

A further problem in human efficiency concerns the adaptation or adaptability of persons to the tasks set before them. It is likely, particularly with the present dearth of facilities for the education of all those who desire to embark in medical practice, that more attention will soon be devoted to the test of the fitness of each candidate for his job. There are many qualifications that characterize the ideal physician. How to discover the latent possibilities of developing them in him who seeks entrance to the profession is a pressing problem in medical education.

INTESTINAL WORMS AND APPENDICITIS

Although the literature on the etiology of appendicitis abounds in the names of American physicians who have contributed to an understanding of the disease, one aspect has of late received its chief emphasis from abroad. There foreign materials are believed to play a larger part in the genesis of the disorder than our clinicians are inclined to admit. There was an earlier period in the study of appendicitis when concretions, seeds, worms, bones and unnamed other foreign things were charged with responsibility in individual cases for irritative and more or less destructive effects on the mucous membrane, and thus of initiating an attack. In Germany, Rheindorf [1] has conducted studies leading him to the conclusion that oxyuriasis, or infestation with the common pinworm, *Oxyuris vermicularis*, assumes a by no means negligible part in the genesis of many cases clinically recognized as appendicitis. His conclusions, based to a considerable extent on histologic examination of the mucous membrane, have by no means been readily accepted.

Recently, Noack [2] has carefully examined the appendixes of a number of patients on whom extirpation of the organ was carried out. In nine out of fifteen cases taken at random from the experiences of a large surgical clinic, pinworms or parts of pinworms were discovered on careful microscopic examination of the removed appendix. Even when remnants of the worms were missing, it is not impossible, Noack argues, that the parasites may have had some responsibility for the attack involving a bacterial invasion of injured tissues subsequent to the disappearance of the worms themselves.

In the light of the current interest in the theory of focal infection, the return to a consideration of foreign bodies as predisposing causes of appendicitis in a larger number of cases than is now commonly assumed may not prove popular. Without presuming to guide the uncertain reader, we may nevertheless point out that, according to Stiles of the United States Public Health Service, the pinworm is one of the most common of the intestinal worms; and a prominent parasitologist believes that there are few persons who have not harbored *Oxyuris* at one time or another in their lives.[3] Furthermore, a recent writer [4] refers to the portal of entry which intestinal worms give to bacteria and protozoa, by reminding us that we have not yet fully awakened to the prime importance of an uninjured mucosa. The relation of intestinal worms to appendicitis, he avers, is more than hypothetic, so that probably far more cases of appendicitis are the outcome of injury done by worms than is usually supposed. Shipley states that appendicitis is a commoner disease now than it was when vermifuges were more frequently given. It has been objected that very few of the thousands of appendixes removed are reported to contain parasites. Chandler points out, however, that they are seldom sought, might easily be overlooked, and might not be recognized as such if found. It is furthermore possible, he adds, that parasites which initiated the inflammation and ulceration might no longer be present in the appendix on its removal, as they are able to move about freely in the digestive tract.

PROBLEMS IN ANTIKETOGENESIS

The considerations of both the theory and the therapy of diabetes no longer deal solely or even preeminently with the fate of ingested carbohydrate so far as it is expressed by glycosuria. Something more than the metabolism of sugars is involved in the pathology of this disease. Second only to the occurrence of sugar in the urine or an abnormally high sugar content in the blood are the evidences of disturbance in the chemical transformation of other fragments of the foodstuffs, expressed in so-called ketosis. The elimination of acetone, acetoacetic acid or betahydroxybutyric acid is always indicative of a metabolic abnormality that of late has usually been associated with disturbances in the breakdown of fatty acids and their physiologic derivatives. It has long been known that ketosis, as expressed by ketonuria, tends to occur when sugar is not burned suitably or sufficiently in the organism. To combat ketosis, it has been customary to increase the amount of available carbohydrate. In the diabetic, this procedure tends to find its limitation, however, in the lowered carbohydrate tolerance of the individual. In a fanciful way it has often been remarked that fats burn in the flame of the carbohydrates; and Woodyatt [5] once added significantly that, when the proportion of fat is too great for the fire, it "smokes" with unburned fat and acetone substances. Sugars are thus antiketogenic or ketolytic in relation to the ketogenic fatty acids of the fats.

1. Rheindorf: Die Wurmfortsatzentzündung, 1920; Centralbl. f. Path. **32**, Part 4, 1921; Mitt. a. d. Grenzgeb. d. Med. u. Chir. **34**, Part 4, 1921.
2. Noack, F. K.: Appendicitis und Oxyuren, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **35**: 407, 1922.
3. Stiles, C. W.: Osler's Modern Medicine **1**: 601, 1907.
4. Chandler, A. C.: Animal Parasites and Human Disease, New York, John Wiley & Sons, 1922, p. 204.
5. Woodyatt, R. T.: Acidosis in Diabetes, J. A. M. A. **66**: 1910 (June 17) 1916.

It now appears that somehow a "balance" is obtained under normal conditions between the ketogenic and the antiketogenic factors in metabolism. Shaffer [6] has developed the hypothesis that, in the usual routine of chemical transformations in the body, antiketogenesis, or the process by which the formation of the undesirable acetone substances is averted, consists in a reaction between acetoacetic acid, the first formed of the "acetone bodies," and a derivative of glucose (or of other antiketogenic substances), the compound being further oxidized; but that, failing to react with ketolytic substance, acetoacetic acid is resistant to oxidation, accumulates, and (after conversion in part into acetone and hydroxybutyric acid) is excreted. According to this idea, abnormal amounts of acetone bodies would appear among the metabolic products only when the rate of ketogenic catabolism exceeds the rate of antiketogenic (ketolytic) catabolism.

Proceeding in harmony with such a general view, several groups of investigators [7] have attempted to estimate the various interreacting factors supplied by the diet in cases of ketosis, in order to learn whether the facts tally with the assumptions. The proteins are potential sources of both ketolytic derivatives (sugar) and ketogenic products, the fats being primarily sources of the latter. Thus far, many data have been accumulated to show that, with dietaries in which the relative proportions of proteins, fats and carbohydrates are so selected as to produce a deficit of the ketolytic (or antiketogenic) groups, ketosis is bound to occur.

It is preeminently in diabetic patients, or persons with a lessened ability to utilize sugar, that the possibility of averting ketogenesis by increasing the carbohydrate intake fails. In the light of the newer studies, however, a high protein intake with its potentialities as a source of sugar in metabolism may also become objectionable, if the carbohydrate thus formed cannot be used. Obvious modes of adjustment to such a situation consist in decreasing the protein metabolism, the fat metabolism or even the total metabolism. Since protein and fat have both ketogenic and antiketogenic quotas, while carbohydrate has only the latter, the problem of securing an optimum for a person who shows both glycosuria and ketosis involves a knowledge of what he actually metabolizes rather than what he may eat. As Shaffer [8] has recently summarized it, interest is focused on the question: How much additional ketolytic substance, in terms of glucose of food carbohydrate, must be allowed the subject (of known size, activity and consequently energy requirements) in order to provide a safe margin over a bare ketogenic balance in his metabolic mixture? If, Shaffer adds, he has sufficient "tolerance" to burn (utilize) such an amount, and receives it, ketosis will not appear; but if his tolerance is already lower, ketosis is unavoidable until the amount of the metabolic mixture (the total metabolism) is decreased to the point at which a ketogenic balance is attained. Many of the successful features in the modern trends in the dietotherapy of severe diabetes can be interpreted in the light of the foregoing.

6. Shaffer, P. A.: Antiketogenesis, II, The Ketogenic Antiketogenic Balance in Man, J. Biol. Chem. **47**: 449 (July) 1921.
7. Shaffer, P. A.: J. Biol. Chem. **49**: 143 (Nov.) 1921. Woodyatt, R. T.: Objects and Method of Diet Adjustment in Diabetes, Arch. Int. Med. **28**: 125 (Aug.) 1921. Hubbard, R. S., and Wright, F. R.: J. Biol. Chem. **50**: 361 (Feb.) 1922.
8. Shaffer, P. A.: Antiketogenesis, IV, The Ketogenic-Antiketogenic Balance in Man and Its Significance in Diabetes, J. Biol. Chem. **54**: 399 (Oct.) 1922.

Current Comment

INTRAPERITONEAL TRANSFUSION

In view of the seemingly miraculous results sometimes observed after the transfusion of blood in desperate cases, there can be little wonder that the procedure has acquired great prominence. Those who are accustomed to practice transfusion appreciate best what difficulties and disappointments as well as what unexpected discouragements may be involved. Aside from the problem of compatibilities of blood between donor and recipient, aside from the difficulties attending the avoidance of clotting by one method or another, there remains the equally serious feature of mastering the intravenous operative technic. Introduction of substances into the circulation or withdrawal of blood no longer appear as formidable as they did only a few years ago. Progress in therapeutic technic has involved, among other things, the acquirement of facility in the manipulation of blood vessels. Nevertheless, it would be unwarranted even today to speak of venipuncture as a simple or insignificant operation. One need only watch the conduct of this operation in every-day practice to appreciate the inelegancies or even crudeness of procedures that ought to be conducted with skill, dexterity and surgical perfection. All of the foregoing circumstances, therefore, seem to justify attempts to secure the benefits of blood transfer by methods other than those of intravenous injection. Perhaps intraperitoneal transfusion will prove to be a possible pathway to success. It might be assumed that red corpuscles thus introduced would find difficulties in reaching the circulation, where they are intended to function, out of the peritoneal cavity. Experiments recently conducted on rabbits at the University of Minnesota by Siperstein and Sansby [1] point interestingly to the probable rapid absorption of freshly citrated blood injected into the peritoneal cavity. That the new erythrocytes actually enter the blood stream is suggested by the rise in hemoglobin and cellular elements following transfusions in normal and anemic animals which cannot be accounted for by a mere concentration of the blood. Easily identified nucleated corpuscles of birds, when injected intraperitoneally into rabbits, can be recovered from the general circulation in fifteen minutes. After severe hemorrhage, the animals improved visibly following the transfusion. No hemoglobinuria could be demonstrated at any time. Consequently, the Minnesota investigators conclude that the intraperitoneal transfusion of freshly citrated

1. Siperstein, D. M., and Sansby, J. M.: The Intraperitoneal Transfusion of Citrated Blood, Proc. Soc. Exper. Biol. & Med. **20**: 111, 1922.

blood acts like a true transfusion and not like the absorption of nutrient material. Whether or not the procedure which they propose as "a therapeutic method of possible merit" is suitable for human conditions must be carefully considered by those who are expert in this field.

PROPOSED REORGANIZATION OF FEDERAL HEALTH ACTIVITIES

Elsewhere in THE JOURNAL [1] appears an account of a conference held in Washington last week on the proposal for a reorganization of the health activities of the federal government. The plan now submitted seems likely to receive serious consideration, as it involves no increase and no decrease in the activities of any of the agencies of the federal government affected, no changes of personnel, and no increase or decrease of appropriations. It proposes simply to assemble under one head—and that head a cabinet officer—in their present form, all of the activities of the federal government relating to health, education and social service, and also the work of the Veterans' Bureau. In the plan proposed, the affairs of each bureau will be administered by a technical head, designated as a director-general, who will be responsible to the secretary as the head of the department. The secretary of the proposed department of education, health and welfare will presumably change with the changes in the administration—just as other cabinet officers do—but this will be a matter of minor importance if competent director-generals remain in the service. Such matters of detail as the determination of just which bureaus, divisions and other agencies will be transferred to the proposed department, and to just which bureau each will be transferred, remain to be worked out. These matters, however, should not be allowed to stand in the way of the larger project. The immediate advantage of the proposed department, it is stated, lies in the fact that in it would be gathered under one responsible head a considerable group of government establishments engaged in work more or less related, and in activities which should be coordinated better than is now possible. The proposal should be given thoughtful consideration by the medical profession.

1. Reorganization of Federal Health Activities, General News, this issue, p. 262.

National Office of Eugenics.—A Belgian national office of eugenics has been established in the Solvay Institute of Sociology at Brussels, according to the *Eugenical News*. Dr. A. Govaerts is director of the office. An appropriation of 10,000 francs has been made by the Institute Solvay, it is stated, and Mr. Armand Solvay will make a personal gift of 7,000 francs. Among those who have been instrumental in the establishment of the office are: Dr. M. F. Boulanger, director of the School of the Feebleminded at Waterloo and president of the Belgian Society of Eugenics; the surgeon general of the Belgian army; H. Velghe, director general of hygiene in the department of the interior; Dr. Bayet of the Royal Academy of Medicine; M. Berryer, minister of the interior and of hygiene, and senators, ministers and lawyers. At the meeting of the international commission, which was held recently in Antwerp, the mayor of the city announced that an appropriation had been made for a branch office of the national office of eugenics, to be located at Antwerp.

Association News

SAN FRANCISCO SESSION

Plan of Proposed Twenty-Five Day Tour, with Stops at Points of Interest

The secretaries of the constituent medical associations of the Eastern states have appointed a committee to arrange for a special twenty-five day tour to San Francisco for the session of the American Medical Association during the week June 25-29. The details and arrangements of the trip will be handled by an experienced tourist representative, who will accompany the party and have entire charge of the tour. In order to secure special train privileges, it will be necessary to have 125 or more persons subscribe to the tour. The committee in charge of this enterprise consists of Dr. E. Livingston Hunt, chairman, 17 West Forty-Third Street, New York; Dr. Wilbur B. Ward, 24 West Fiftieth Street, New York, and Dr. Malcolm C. Rose, 504 Knickerbocker Building, New York. The committee extends a cordial invitation to members and Fellows of the American Medical Association to join the party.

On the way to San Francisco, stops will be made at Chicago, Kansas City, Denver, Colorado Springs, Albuquerque, the Grand Canyon, San Bernardino, Riverside, Los Angeles and Yosemite National Park. On the return trip, stops will be made at Portland, Seattle, Victoria, Vancouver, Lake Louise, Banff, Winnipeg, St. Paul and Chicago. At each stopping place, visits will be made to points of interest, all details of transportation having been arranged for.

Meals will be served on the diners attached to the trains of the various railroads over which the tour will pass, except where stops of considerable length are made in a few cities, in which instances meals will be had at leading hotels. Those interested may secure complete information concerning the tour from Dr. E. Livingston Hunt, chairman of the committee in charge, 17 West Forty-Third Street, New York.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Osteopaths Hit by Supreme Court Ruling.—A decision rendered by the supreme court, Montgomery, January 4, in the case of the *State ex Rel. Leonora Bond* v. *the State Board of Medical Examiners* sets forth that osteopaths have no legal recognition in Alabama, and the state board of medical examiners cannot be forced to permit them to take the regular medical examination. The supreme court held that the state board of examiners could not be forced by mandamus to perform a function which is clearly within its own discretion.

ARIZONA

State Health Commissioner Named.—Governor Hunt has appointed Dr. Frederick T. Fahlen, Phoenix, as state superintendent of public health to succeed Alexander M. Tuthill of Phoenix.

CALIFORNIA

Unconditional Pardon Granted Dr. Card.—Dr. William S. Card, San Francisco, convicted of murder in the second degree in 1918 and sentenced to a minimum of ten years and a maximum of life, was recently granted a conditional pardon by Governor Stephens which made it imperative for Card to leave California on his release from San Quentin. The new governor, Friend Richardson, it is reported, has made the pardon unconditional.

CONNECTICUT

Yale University News.—According to a new agreement between the board of permanent officers of the Yale Univer-

sity School of Medicine and the corresponding boards of Yale College and the Sheffield Scientific School, admission to the combined course in either graduate school will be on a competitive, instead of an automatic, basis as heretofore. Those seniors will be eligible as candidates for the course whose scholarship standing during their junior year has been 75 or above, and who have fulfilled the science and language requirements of the medical school. Their applications, which are due before July 1, following the completion of the junior year, will be considered in conjunction with all other applications, and the medical class will be chosen from the entire number of candidates. The Yale graduates who are admitted will take their entire first year medical work and receive credit for a B.A. or B.S. degree. The degree of M.D. is awarded after three years' additional study. As only sixty students are admitted each year from several hundred applicants, the decision to select all members of the first year class in the Yale Medical School on the same basis is of interest to premedical students throughout the country.

DISTRICT OF COLUMBIA

Sentence Physician for Murder.—According to reports, Dr. Herbert Bryson, Washington, convicted of second degree murder, September, 1922 (THE JOURNAL, Oct. 14, 1922, p. 1343), was sentenced, January 5, to serve from fourteen to eighteen years in the penitentiary. Dr. Bryson was convicted of killing a woman in Cassville, Pa., with whom he had eloped from Washington.

Women's Welfare Association.—January 5, the Women's Welfare Association, Washington, opened a special clinic for the treatment of both asthma and hay-fever in young people, as the first step in the antiasthma campaign for the benefit of young girls now being waged in the city. The clinic, in charge of an expert, will be held every Friday afternoon. The Women's Welfare Association had previously conducted an asthma and hay-fever clinic for adults as part of the association's clinic of applied immunology.——Under the auspices of the Woman's Welfare Association, Dr. George M. Kober, professor of hygiene and dean of the Georgetown University School of Medicine, Washington, delivered, January 14, the first of a series of public health lectures to be given semimonthly. His subject was "Progress in Health Conservation During the Last Fifty Years." The series will run through April. Subsequent speakers will be Drs. George W. McCoy, director of the U. S. Public Health Service Hygienic Laboratory; Hugh S. Cumming, surgeon general of the U. S. Public Health Service; Valeria H. Parker, director of the American Social Hygiene Association; William A. White, superintendent of St. Elizabeth's Hospital; Vernon Kellogg, secretary of the National Research Council, and Harvey W. Wiley.

ILLINOIS

Free Dental Clinic for Cook County.—It was announced at the annual meeting of the Chicago Dental Society, January 20, that a children's free dental clinic will be opened within ninety days at the Cook County Hospital in a building formerly used as a measles quarantine station, with funds from the Pageant of Progress Exhibition. It was also announced that $3,000,000 had been given by an anonymous Chicagoan to found and maintain a large dental clinic.

Smallpox Incidence Climbing.—One hundred and forty-four cases of smallpox were reported to the state department of public health during the first two weeks of January as compared with 120 cases for all of December and decidedly fewer cases for the two preceding months. Counties reporting ten or more cases during the first two weeks in January were Bureau, Carroll, DeKalb, Henry, Lee and Will. Lee and Will counties reported the greatest prevalence.

Chicago

Personal.—Dr. Albert J. Ochsner spoke on "Medical Economics" at a meeting and dinner of the Will County Medical Society, at Joliet, January 10.——Dr. Frank C. Mann, Rochester, Minn., gave an address on "The Experimental Production of Peptic Ulcer" at the regular meeting of the faculty of the Laboratory of Surgical Technique of Chicago, January 26.——Dr. Joseph Welfeld, Chicago, held a skin and urologic clinic before the Kane County Medical Society at Elgin, recently.

INDIANA

State Board of Medical Registration and Examination.—At the annual meeting of the board in Indianapolis, January 10, Dr. William A. Spurgeon, Muncie, was reelected president. All other officers were reelected as follows: Dr. Eldridge M. Shanklin, Hammond, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Jesse W. Bowers, Fort Wayne, treasurer.

Source of Smallpox Traced.—The city health commissioner of Fort Wayne, Dr. John H. Gilpin, announced, January 9, that, following an exhaustive investigation by the board of health, the source of the recent epidemic of smallpox in the city had been determined. The disease was brought to Fort Wayne through two Harlan men who worked in the Pennsylvania shops and returned to their homes each evening. Several cases of smallpox developed in the families of these men. Ten cases occurred in the city, and following the development of several cases in the South Side High School, that institution was closed. More than 500 children were vaccinated at the board of health office, January 8 and 9.

IOWA

Clinic Week.—The twelfth annual clinic of the State University of Iowa College of Medicine, Iowa City, was held, January 16-17. Prof. John Whitbridge Williams, Baltimore, was the principal speaker. Dr. Lee W. Dean, dean of the college of medicine, and Walter A. Jessup, Ph.D., president of the university, also gave addresses.

KENTUCKY

Health Surveys.—A survey of the diet and care of Southern mountain children, by the children's bureau of the U. S. Department of Labor disclosed that only 16 per cent. of the children studied belonged to families which were able to provide the modest requirements of adequate living. Nearly half the children were living in homes in which the family income was so small as to make a minimum standard of care appear impossible. The children living on a diet consisting of milk and unbolted corn meal were found, to be well nourished. The other foods available in the community, such as corn bread and sorghum, dried beans and fat salt "middlings" so failed to supply the essentials of growth that undernourishment resulted when the dietary was composed chiefly of these foods. This survey was undertaken at the request of the Kentucky State Board of Health, to discover "why a state famous the world over for its prosperity should turn out so large a percentage of physically defective men as the draft record showed," and its findings have just been published under the title "The Nutrition and Care of Children in a Mountain County of Kentucky."——Dr. Thomas Haines, representing the National Committee for Mental Hygiene, is in Kentucky directing a mental hygiene survey in the rural schools of the state. He will also visit the eleemosynary institutions on invitation of the state board of charities and corrections to make a mental and conditional survey of their inmates. This work is the result of a resolution passed at the last session of the state legislature, inviting the committee to visit Kentucky.

MARYLAND

Public Health Association Formed.—At a meeting held in Lonaconing, January 8, the Allegany County Public Health Association was organized by Drs. Champe C. McCulloch, county health officer, Ralph Barnes, medical director of the Maryland Tuberculosis Association, and Harvey H. Weiss, city health officer of Cumberland. The purpose of the association is to assist in all public health activities in the county and finance a public health nurse for the county outside of Cumberland.

Personal.—Dr. William S. McCann, associate professor of medicine at Johns Hopkins University, Baltimore, has been appointed professor of medicine at the University of Rochester (N. Y.) Medical School. Dr. McCann was at one time Arthur Tracy Cabot fellow at Harvard University School of Medicine, Boston, and instructor of medicine at Cornell University Medical College, New York.——Dr. Karl M. Wilson, associate in clinical obstetrics at Johns Hopkins University, has been appointed professor of obstetrics at the University of Rochester Medical School.——Dr. Florence R. Sabin, Johns Hopkins Medical School, Baltimore, addressed the Physiological Society of Philadelphia, at its stated meeting, January 15, on the subject of "Recent Studies on Blood and Bone Marrow."

MASSACHUSETTS

Boston Medical History Club.—At the meeting held at the medical library, December 18, it was voted to change the constitution so that the annual meeting will be held in April

instead of December. Dr. Robert M. Green read a paper on "The Early History of Medical Journalism in New England," and Dr. Harvey Cushing spoke on "Pasteur."

Personal.—Dr. Francis H. McCrudden, chief of the medical service of the Robert Brigham Hospital, Boston, while it was operated by the U. S. Veterans' Bureau, has been made chief of the medical service of the U. S. Public Health Service Hospital, Washington, D. C. Dr. McCrudden is professor of therapeutics at Tufts Medical School, Boston.——Dr. Howard L. Quimby has been appointed city physician of Gloucester, and Dr. Philip P. Moore has been appointed a member of the Gloucester Board of Health.——Dr. Paul H. Provandie was recently elected mayor of Melrose.——Dr. William O. Hewitt was named health officer of Attleboro recently, to succeed Dr. Ralph P. Kent, who had held the position for eight years.——Dr. A. F. Budreski has been appointed city physician of Brockton.——Dr. Michael R. Donovan, health officer of Lynn, fell recently, and fractured his shoulder blade.——Dr. John I. McNamara has been elected a member of the board of health of Taunton.——Dr. F. DeBorgia Bergeron has been elected assistant city physician of Fall River.

Harvard University News.—The following changes in the faculty of the Harvard Medical School have recently been announced: Dr. Francis Howard Lahey, professor of surgery at Tufts College Medical School, Boston, has been appointed professor of clinical surgery; Dr. Charles Allen Porter has been promoted to the Homans professorship of clinical surgery; Dr. David Cheever, to an associate professorship of surgery, and Dr. Howard A. Lathrop, to the position of acting professor of clinical surgery during 1923. Dr. George P. Denny has been made director of appointments for medical alumni during the present year.——The university has received a payment of $100,000 on account of the $200,000 legacy left for cancer research under the will of the late Hiram F. Mills of Quincy, who died in October, 1921. The bequest was made to the medical school for the establishment of the Elizabeth Worcester Mills Fund, the income "to be devoted to the investigation of the origin and cure of cancer," in memory of his wife.——A fund of $28,000 has also been received by the university by the bequest of the late Miss L. W. Walker of Boston, to establish scholarships at the Harvard Medical School "for the benefit of four needy and deserving students."——Mr. and Mrs. McKinlock of Chicago have donated the sum of $500,000 to the university, for the erection of a freshman dormitory in memory of their son who was killed in action in France during the World War.

MICHIGAN

Personal.—Dr. George G. Barnett has been appointed full-time health officer of Ishpeming to fill out the unexpired term of Dr. David Littlejohn, who resigned recently.——Dr. A. H. Horn, formerly on the staff of the Michigan Home and Training School for the Feebleminded, Lapeer, has been appointed assistant superintendent of State Hospital No. 1, Fulton, Mo. ——Dr. F. J. Banting of Toronto, Canada, gave a lecture on "Insulin" before the Bay County Medical Society at Bay City, January 21.——Dr. Reuben J. Harrington has been appointed health officer of Muskegon, to succeed Dr. Charles F. Smith, who has resumed private practice. Dr. Eugene S. Thornton was reelected chairman of the board of health.——Drs. E. C. Warren and L. Fernald Foster were recently elected president and secretary, respectively, of the Bay County Medical Society.——Dr. Worth Ross has resigned as director of the division of child hygiene of the health department of Detroit, following twelve years' service. Dr. Earl W. May, Detroit, has succeeded him.

MINNESOTA

Dr. Scofield Reelected.—At the annual meeting of the Minnesota State Board of Health, Dr. Charles L. Scofield, Benson, was reelected president of the board.

Society News.—The Ramsey County Medical Society held its third annual clinic week, January 9-12, at St. Paul. Dr. Vilray P. Blair, associate in surgery, Washington University School of Medicine, and professor of oral surgery, Washington University Dental Department, St. Louis, gave an address on "Repair of Defects of the Face; Congenital and Acquired." ——The annual meeting of the Northwestern Medical Officers' Association of the World War was also held at St. Paul, January 9.——The annual banquet of the Minnesota Academy of Ophthalmology and Otolaryngology was given, January 11, in conjunction with the clinic week of the county medical society, and all the visiting physicians attending congresses in St. Paul were invited to attend. Dr. Meyer Wiener, St. Louis, gave an address. Another banquet was given, January 10, at the St. Paul Hotel, at which Dr. Dean Lewis of Chicago, professor of surgery at Rush Medical College, spoke on "Treatment of Fractures and Their Complications."

MISSISSIPPI

Society News.—At the annual meeting and banquet of the Central Medical Society held at Jackson, Dr. John H. McLain was elected president and Dr. Roland W. Hall, secretary-treasurer. A vice president was elected from each of the counties of Yazoo, Smith, Madison, Rankin, Hinds and Simpson, which constitute the society. Dr. James B. McElroy, Memphis, Tenn., gave an address on "Syphilis of the Aorta." ——At the annual meeting of the South Mississippi Medical Association in Laurel, Dr. John R. DeVelling, Laurel, was elected president and Dr. Joseph S. Gatlin, Laurel, secretary-treasurer. Dr. Walter S. Leathers, state health commissioner, spoke on "Medical Progress and Its Economic Benefit to the State."

MISSOURI

Missouri State Board of Health.—At the annual meeting of the state board of health in Jefferson City, January 10, Dr. Emmett P. North, St. Louis, was elected president; Dr. Rudolph S. Vitt, St. Louis, vice president, and Dr. Cortez F. Enloe, Jefferson City, secretary and state health commissioner.

NEW YORK

Physicians Will Not Protest Registry Measure.—An attempt by a minority group of physicians to have the Kings County Medical Society hold a mass meeting to protest against the alleged endorsement by the New York State Medical Society of a bill providing for the annual reregistration of physicians throughout the state was defeated at the monthly meeting of the county society in Brooklyn, January 16. Dr. James Vanderveer, chairman of the legislative committee of the state society, went down from Albany to address the meeting on the subject. He stated that the measure was for the protection of the physicians and to weed out the men practicing medicine on the diplomas of dead physicians or on purchased or stolen diplomas, of which there were many in the state.

Health Drive to Open in Syracuse.—Syracuse has been selected as the up-state industrial city area for one of the three health and tuberculosis demonstrations to be made in New York with the aid of the Milbank Memorial Fund. The purpose of the demonstrations is to bring all the resources of science and of public and private agencies together in an intensive campaign to show the practicability of preventing tuberculosis and sickness. The demonstration will be carried on for five years, and it is estimated that the total expenditures will be between $1,500,000 and $2,000,000. Cattaraugus has been chosen by the administrators of the fund for a demonstration of what can be accomplished in a rural county in a health campaign. Both areas were selected on the recommendation of the executive committee of the tuberculosis and public health committee of the State Charities Aid Association, with the approval of the technical board of the Milbank Memorial Fund. The Milbank fund was created by the late Mrs. Elizabeth Milbank Anderson, in memory of her father and mother, Mr. and Mrs. Jeremiah Milbank, and the demonstrations will be in the nature of a memorial to Mrs. Anderson.

New York City

Harvey Society Lecture.—Dr. Philip A. Shaffer, professor of biologic chemistry, Washington University Medical School, St. Louis, will deliver the sixth Harvey Society lecture at the New York Academy of Medicine, February 10. His subject will be "Antiketogenesis: Its Mechanism and Significance."

Association of the Alumni of the College of Physicians and Surgeons.—The annual meeting of the association will be held, January 30, at the Columbia University Club, New York. Prof. Walter W. Palmer, Bard professor of the practice of medicine of Columbia University, will read a paper on "The Development of the Department of Medicine." A dinner will follow the meeting.

Academy of Medicine to Expand.—At a special meeting of the New York Academy of Medicine held, January 15, resolutions were presented which were adopted at the stated meeting, January 18, whereby the trustees of the academy have been empowered to sell the present property of the Academy

at 17 West Forty-Third Street at the time and on the terms that they may deem for the best interests of the academy. The trustees were further empowered to use, for the purchase of a new site for the academy building, the proceeds of the sale and also to sell any other property which the academy can properly dispose of, for this purpose. It is reported that the trustees have an option on a site for a new building at Sixtieth Street and Park Avenue.

NORTH CAROLINA

Physicians to Charge Insurance Companies.—At a meeting of the Guilford County Medical Society, in Greensboro, January 4, a resolution was unanimously passed to the effect that physicians of the county should in future charge a stipulated fee to insurance companies for giving information regarding some one of their patients. It was stated that a physician by giving information to an insurance company without written evidence that the patient was willing for the physician to give the information risked being sued for damages. A committee will be appointed by the medical society to confer with the several insurance companies on fixing a minimum charge for this service.

OREGON

State Board of Health Elects.—Dr. John H. Rosenberg, Prineville, has been elected president of the Oregon State Board of Health to succeed Dr. Charles J. Smith of Portland. Dr. Frederick D. Stricker, Portland, was reelected secretary of the board.

University Dedicates Medical Building.—On January 13 the new University of Oregon medical school building on the campus in Portland was dedicated and named Mackenzie Hall in memory of the late Dr. Kenneth A. J. Mackenzie who, until his death, was dean. More than a 1,000 guests assembled in the lobby of the new building and the dedication exercises were followed by an inspection of the plant by those attending. The new building is a four story, reinforced concrete structure which embodies the latest development in medical school construction. It houses the administrative offices, the library, the departments of bacteriology, pathology, experimental biology and a portion of the department of physiology, and also research laboratories for the clinical departments. The building cost $226,000, one half of which was appropriated by the General Education Board and the other half by the state legislature. The General Education Board in addition appropriated $50,000 for equipment. The new building trebles the size of the medical school plant and enables an increase in the student body to a total of 280 students or seventy in each of the four years.

PENNSYLVANIA

Declines State Health Job.—Governor Pinchot announced, January 19, that Dr. Victor G. Heiser, New York, had declined the offer of the post of state commissioner of health of Pennsylvania to succeed Dr. Edward Martin.

Loving Cup for Dr. Martin.—On his retirement as state health commissioner, Dr. Edward Martin was presented with a loving cup by Colonel John D. McLean, deputy health commissioner, on behalf of the employees of the department.

Medical Club of Philadelphia.—Dr. John G. Clark was elected president of the club at the annual meeting; Drs. Albert E. Roussel and Alexander MacAlister, vice presidents, and Dr. William S. Wray, secretary. Dr. George A. Knowles will succeed Dr. Lewis Adler, Jr., who resigned after seventeen years of service as treasurer.

TENNESSEE

Personal.—Dr. John F. Binkley, Nashville, has been appointed director of rural sanitation to succeed Dr. Eugene L. Bishop, who has been granted leave of absence to study at Johns Hopkins University, Baltimore.——Dr. James B. McElroy, acting dean of the University of Tennessee College of Medicine, Memphis, was recently elected president of the Memphis and Shelby County Medical Society at the annual banquet, to succeed Dr. Frank D. Smythe.——Dr. William E. McGaha, who with Dr. Harry J. Lemmon, has been operating the Church Street Hospital, Newport, has retired from the corporation and Dr. Lemmon is now the sole owner, it was recently announced.

VIRGINIA

Public Health Course.—To meet the need of trained health workers in the state, courses in public health work and sanitary inspection are offered by the University of Virginia, under the direction of Dr. William S. Keister, health officer of Charlottesville, in cooperation with the state board of health. These courses began January 3, and those who apply to the department of medicine may be admitted at any season of the year. One course is arranged for medical graduates, who will receive twelve weeks' of intensive practical training in field and office work, and the other course is arranged for the training of sanitary inspectors, who will receive ten weeks of field work under the supervision of health officers. Those who complete the course will be certified by the university authorities.

WEST VIRGINIA

New Hospital Opened.—The Guyan Valley Hospital will be opened at Logan, March 15, it was recently announced. The institution contains ninety beds. The superintendent has not yet been appointed.

WISCONSIN

County Medical Meetings.—At the annual meeting of the Fond du Lac County Medical Society, Dr. John J. Rehorst was elected president and Drs. David N. Walters and D. John Twohig, were reelected secretary and treasurer, respectively.——Drs. Guerdon C. Buck, Platteville, and Dr. Carlton H. Andrew, Platteville, were elected president and secretary-treasurer, respectively, of the Grant County Medical Society at the annual meeting in Lancaster, December 22.——The Sheboygan County Medical Society elected Drs. Joseph C. Elfers and Gustav J. Hildebrand, president and secretary-treasurer, respectively, for 1923.

CANADA

University News.—That the University of Toronto is in urgent need of $60,000 to purchase "Insulin" for treatment of the thousands of people suffering from diabetes who are daily applying for treatment was the information given out by Col. A. E. Gooderham, chairman of the university committee on Insulin, recently. According to Colonel Gooderham, the problem of funds for the purchase of Insulin is one that should be settled by the provincial government. At present, only about twenty patients can be treated each day.

Public Health News.—Dr. Gordon Bates, Toronto, and Dr. J. J. Hagerty of the Dominion Department of Health, Ottawa, recently left for New Brunswick, where they will address a series of public meetings on social hygiene, and form a number of new social hygiene councils. Dr. William F. Roberts, minister of health for New Brunswick, is arranging an itinerary, which will include the larger cities of the province.——The Manitoba Social Hygiene Council is asking the provincial government to make a certificate of health necessary for the securing of a marriage license, so as to bar the marriage of those suffering from social diseases.

GENERAL

Influenza.—An apparently mild form of influenza is prevalent in several states. According to *Public Health Reports*, Mississippi reported 3,048 cases for the three weeks ending January 6; North Carolina, 2,277; West Virginia, 959; Georgia, 872, and Alabama, 503. In the fifth week of 1920, Illinois reported 30,330 cases, and in 1922 New York alone reported 5,731 cases for the week ending February 4.

American Legionaries Elect.—The annual dinner of the Caduceus Post 818, American Legion, was held at the Harvard Club, New York, January 11. This post represents a membership of 400 ex-service men who have been connected with the medical, dental or sanitary corps. Dr. Henry C. Coe was elected commander for the ensuing year; Drs. S. W. Wadham, W. C. Fisher and Mr. Gerstner, vice commanders, and the Rev. Herbert Shipman, treasurer. Dr. DeWitt Stetten and Dr. Royal S. Copeland gave addresses, following the dinner.

Physicians' Prescriptions to Be Protected.—Orders have been issued by the internal revenue commissioner at Washington, D. C., to bottle all bulk liquors now held in bond and to guarantee them as to proof and quality, in order to protect the public from poisonous whisky bought at drug stores on prescriptions. In an effort to curb dealings in denatured and industrial alcohol, the federal prohibition authorities have issued orders for the revocation of scores of dealers' permits, among these being that issued to one of the largest alcohol producing plants in the country, it is stated.

The Atlantic Medical Monthly.—About a year ago, Dr. Alexander R. Craig, late secretary of the American Medical Association, suggested to the Board of Trustees of the Pennsylvania Medical Society that a consolidation of the medical journals of Delaware, Maryland and Pennsylvania would centralize medical thought and purpose. A favorable impression was made, and Dr. Craig was authorized to present the suggestion in an unofficial capacity to the other two state societies. The Medical Society of Delaware was receptive, and at a conference of the publication committees a tentative agreement was made. After passing through the usual official channels, the suggestion will appear in concrete form in April, as the *Atlantic Medical Monthly*. The new journal will represent the combined journals of Pennsylvania and Delaware, and will be a successor to the *Pennsylvania Medical Journal*. The *Atlantic Medical Monthly* will bring closer together the physicians in these neighboring states, and will be a monument to one whose life was devoted to the medical profession.

Proposed Bill for Narcotic Control.—Senator France introduced in the Senate a measure providing for financial aid from the United States for the states in the prevention of drug addition and for the care and treatment of drug addicts. The bill appropriates $3,000,000 for the fiscal year ending June 30, 1920, and $2,000,000 for the fiscal year ending June 30, 1921. The Secretary of the Treasury is authorized to cooperate with the states, through their respective state boards or departments of health, narcotic commissions or other state or municipal officers in charge of the control of the production or distribution of narcotics and habit-forming drugs, or in charge of the care and treatment of drug addicts resident within the confines of their states. He is empowered to allot among the states appropriations of federal money for this purpose to an amount not to exceed the sum appropriated by the state for the same purpose. The Secretary of the Treasury may also permit the use by any state or municipality of any hospital or other building, equipment and medical supplies, including any narcotic drugs, in the possession of and under the control of the U. S. Public Health Service.

Narcotic Regulations Modified.—Regulations governing the prescribing of narcotics in the treatment of incurable diseases and for aged and infirm addicts whose physical collapse from the withdrawal of the drug might be fatal have been modified by the Commissioner of Internal Revenue, with a view to preserving as far as possible professional secrecy with respect to such cases. The commissioner has heretofore ruled that an order purporting to be a prescription, issued to an addict or habitual user of narcotics, not in the course of professional treatment in an attempted cure of the patient but for the purpose of providing narcotics to keep him comfortable by maintaining his customary use, is not a lawful prescription; and that persons filling and receiving drugs under such an order, and the person issuing it, shall be regarded as guilty of violation of the law. Exceptions have been recognized, however, in the treatment of incurable diseases and of aged and infirm addicts. In the treatment of incurable diseases, it has been required that it be endorsed on the prescription that the drug is dispensed in the treatment of an incurable disease; under the treasury decision just issued, the physician may endorse the prescription in that manner, or endorse simply, "Exception (1) Art. 117." In the treatment of aged and infirm addicts, the physician has heretofore been required to endorse on the prescription that the patient is aged and infirm, giving age, and that the drug is necessary to sustain life; under the recent decision, the physician may endorse his prescription as heretofore, or he may endorse it, "Exception (2) Art. 117." By using either of the cryptic alternatives now allowed, a physician may limit the chances of undesirable disclosures of the patient's condition. The druggist who fills a prescription is no longer required to obtain on the back of it the signature of the person who secures the drug prescription. It is sufficient that the name of such person appear.

Reorganization of Federal Health Activities.—On Wednesday, January 17, a conference was held in the office of Brig.-Gen. C. E. Sawyer, physician to President Harding and chief coordinator of the federal Board of Hospitalization, to consider plans for the coordination of the health activities of the federal government. In addition to General Sawyer and the Surgeon-Generals of the Army, the Navy and the Public Health Service, there were present Dr. A. W. Belting, president Eastern Homeopathic Medical Association, Trenton, N. J.; Lieut.-Commander J. T. Boone, Medical Corps, U. S. Navy; Dr. Claude A. Burrett, Rochester, N. Y.; Dr. Gilbert Fitzpatrick, chairman, Executive Committee, American Institute of Homeopathy, Chicago; Dr. C. W. Garrison, executive secretary and state health officer, state board of health, Little Rock, Ark.; Dr. James A. Hayne, secretary and state health officer, state board of health, Columbia, S. C.; Dr. A. T. McCormack, president, Conference of State and Provincial Health Authorities of North America, and secretary, state board of health, Louisville, Ky.; Dr. R. M. Olin, state health commissioner, Lansing, Mich.; Col. W. O. Owen, Washington, D. C.; Dr. W. A. Pearson, dean, the Hahnemann Medical College and Hospital, Philadelphia; Dr. Ennion G. Williams, state health commissioner, Richmond, Va., and Dr. William C. Woodward, executive secretary, Bureau of Legal Medicine and Legislation, American Medical Association. Explaining the purposes of the meeting, General Sawyer said:

> For some time there has been a plan on foot for the development of a Department of Public Welfare. The Reorganization Committee of the government has agreed that it is essential that such a department be created, and since there is likely to be early preliminary action on this subject, I deem it advisable that the medical profession should be informed as to a tentative plan now under consideration, to be presented to Congress, which affects the Public Health Service of the United States. After a careful study of the necessity of a Department of Public Welfare, it has been concluded that such a department should be organized, incorporating in its scope, education, public health, social service and the Veterans' Bureau. This department would be conducted under a new cabinet officer, with an assistant secretary, and one director-general for each of the subdivisions of the department, the subdivisions to be sectionized as found necessary in the fulfilment of the completed plan.

According to the plan submitted by General Sawyer, the proposed department will be known as the Department of Education, Health and Welfare, with a secretary who is to be a cabinet officer at its head, and an assistant secretary. The plan calls for the creation of a bureau of education, a bureau of health, a bureau of social service, and the Veterans' Bureau, each with a director-general at its head. It is to be expected, of course, that the secretary, and possibly the officer next in rank, the assistant secretary, will, because of their rank and their relation to the determination of the policies of the government, change with each administration. The several director-generals, however, are to be the technical heads of the bureaus, and as more or less permanent officers to preserve continuity of policy and administration. The plan calls for no enlargement or reduction in the activities of the several branches of the federal government now engaged in work in the lines of activities to be incorporated in the new department. It is proposed that the various agencies of the federal government (except those within the army and navy) relating to health, education, social service and the rehabilitation of veterans be transferred to the new executive department, each to carry with it its present powers, appropriations and personnel, intact. It was suggested that the prospect was never better than now for the establishment of medicine as a fixed unit, associated with other departments of the government, providing in a most satisfactory and effective way for carrying out the highest ideals of modern medicine. An executive committee to carry forward the work of the conference was appointed by the chairman, consisting of Drs. Fitzpatrick, Olin and Woodward.

LATIN AMERICA

Further Restrictions on Foreign Physicians in Mexico.—According to a presidential decree of Dec. 23, 1922, validation of foreign diplomas in Mexico will hereafter be governed by regulations issued by the National University of Mexico City. According to these regulations, foreign diplomas will be revalidated in Mexico by the National University only when reciprocity agreements exist (Mexico has such a treaty only with Japan) and the foreign diploma has been issued by an acceptable institution. Foreign physicians must otherwise submit to a general examination in Spanish. It is believed that these requirements, if enforced, would disqualify the majority of American physicians in Mexico now practicing by sufferance or by verbal agreement.

Personal.—The two prizes offered by the Sociedad Médico Quirúrgica of Guayaquil for the best reviews of the work of Pasteur were awarded to Dr. F. López of Quito and Dr. Luis Espinosa Tamayo of Guayaquil. A silver tablet with inscription was the first prize. Both articles are to be published in the *Anales* of the society.——Dr. Nin Posadas of Buenos Aires has been elected foreign corresponding member by the newly reorganized Italian Urologic Society.——Drs. Carlos A. Arteta and A. J. Valenzuela have returned to Guayaquil from their trip to Cuba. They were the official delegates from Ecuador to the recent Latin-American Medical Congress at Havana.——Dr. J. M. Estrada Coello was

the official delegate from Ecuador at the Third American Child Welfare Congress held recently at Rio. He is one of the five editors of the *Anales*, the organ published by the Sociedad Médico Quirúrgica of Guayaquil.——At the time of the Brazilian centennial celebration, the president of Portugal, Dr. Antonio José de Almeida, who is a retired physician, was one of the guests. The National Academy of Medicine held a special meeting in his honor, and elected him to honorary membership.

FOREIGN

Chair of Alcohol Research Established.—A foundation has been established by a retired merchant of Osaka, Japan, and the sum of 100,000 yen ($50,000) has been granted for placing in one of the universities of Japan a chair of alcohol research, with the object of putting temperance work in that country on a sounder basis. This decision results, it is stated, from efforts of the American Association for Alcohol Research, founded in 1921 by Capt. Richmond Hobson, now seeking a similar endowment for a chair of alcohol research in an American university.

Medical News from China.—The China Medical Board of the Rockefeller Foundation has made a conditional gift of $75,000 in gold to the Peking Union Medical College for the erection of one of the two science halls which are provided for in the plans for a group of buildings to be erected on a 300 acre site. The gift is contingent on the raising of an equal amount for the erection of the other science hall. A campaign to raise the $1,000,000 necessary for the erection of the new buildings was recently launched by L. Leighton Stewart, president of the university.——The revised English edition of "Infant Care," a publication of the federal children's bureau, is being translated into Chinese and adapted to Chinese conditions by Dr. Vivia S. Appleton, associate secretary of the Council on Health Education, Shanghai, and Mrs. Chen.

American Women Establish Quarantine Station in Greece.—Dr. Mabel Elliott, formerly of Benton Harbor, Mich., recently arranged with the Greek government to take over the entire island of Macronisi, in the Grecian Archipelago, 30 miles south of Athens, and equip it with facilities for handling 10,000 refugees at one time, in an effort to cope with the unprecedented outbreak of disease among the Near East refugees in Greece. Dr. Olga F. Stastny of Wilber, Neb., will be in charge of the station and will have a staff of forty Greek physicians and nurses. The cost of the project is estimated at $10,000, which will be entirely defrayed by the American Women's Hospital Association, of which Dr. Elliott is director. The island, which is 8 miles long and 2 miles wide, is uninhabited.——Dr. Esther Lovejoy, New York, president of the American Medical Women's International Association, has just returned to Greece to continue her relief work among the refugees.

Deaths in Other Countries

Dr. **Kenneth Macleod** at Southampton, December 17, aged 79. Dr. Macleod formerly served in the Indian Medical Service and for many years was professor of surgery at Calcutta Medical College and health officer of Calcutta; founder, and at one time president, of the Calcutta Medical Society; later he was appointed professor of military medicine at the army medical school, Netley, England, and was president of the section on tropical medicine of the British Medical Association. For twenty years, he edited the *Indian Medical Gazette*, and he was the author of many well known medical works.——Dr. **Max Nordau,** at Paris, aged 74. He was born at Budapest but practiced medicine at Paris, where he wrote the iconoclastic works, "Conventional Lies" and others that have made his name well known and helped to break the spell of *Gottesgnadenthum*. He spent the years of the war in Spain.——Dr. **A. Bonome,** professor of pathologic anatomy and bacteriology at the University of Padua, aged 66.——Dr. **Erico Coelho,** professor of obstetrics at the University of Rio de Janeiro, senator, and author of numerous scientific and literary works.——Dr. **V. Godinho** of S. Paulo, Brazil, author of a textbook on microbiology.——Dr. **L. Dedet,** at Paris, a retired naval medical officer.——Dr. **G. Domenech y Lorda,** Villaclara, Cuba, public health inspector for the province.——Dr. **Herman Legrand,** the public health official for France at Alexandria, and physician to the European Hospital.——Dr. **Mario Studart** of Rio de Janeiro.——The *Archivos Brazileiros de Medicina* reports the death of Dr. **T. Pimentel de Ulhoa** of Uberaba, and of **Dr. J. Hardmann,** prominent in the public health and hospital service of the state of Parahyba.

CORRECTION

The Names of Proprietary Preparations.—In the letter by Dr. Oliver T. Osborne, THE JOURNAL, January 13, page 127, the first sentence should read "It should not be suggested," the word "not" having been omitted.

Government Services

School of Neuropsychiatry in Veterans' Bureau

A school of neuropsychiatry has been established at St. Elizabeth's Hospital, Washington, D. C., by the U. S. Veterans' Bureau. The difficulty of obtaining physicians experienced in the treatment of patients with mental and nervous troubles made it desirable for the Veterans' Bureau to establish this special school to train physicians to care for such cases.

The school will be under the direct charge of Dr. Frank F. Hutchins, clinical director of neuropsychiatry, U. S. Veterans' Bureau, and professor of mental and nervous diseases, University of Indiana. The present class attending the school is composed of fifty graduate physicians, all ex-service men, carefully selected from 1,200 applicants. These physicians, on satisfactory graduation from the course, have guaranteed to give at least two years' continuous professional service to the beneficiaries of the U. S. Veterans' Bureau. Each course will extend over a period of about four months. There will probably be not more than two courses annually. Courses will be offered as long as it appears necessary in order to meet bureau requirements. Instruction will cover the necessary reviews of the fundamentals, followed by clinics and lectures on the various forms of nervous and mental diseases, including endocrinology. Special attention will be devoted to diagnostic methods, general care of patients and methods of treatment. Students will have actual experience in practical work. General problems of hospital administration, medicolegal questions, rehabilitation methods, psychometric examinations and other related matters will be adequately dealt with. The entire course covers a period of four months. It consists of 176 lectures and approximately 500 hours of laboratory work.

The main part of the course will be given at St. Elizabeth's Hospital, a government institution for the insane, at Washington, D. C., which offers unusual and unexcelled facilities for such work. There are nearly 4,000 patients and case histories of more than 20,000 discharged patients immediately available for study. Here are all classes of nervous and psychotic diseases, while other public hospitals in Washington will provide abundant clinics in so-called functional diseases, borderline cases and the milder types.

The teaching staff that has been selected to give this course in neuropsychiatry is significant. A number of America's most eminent neurologists and psychiatrists will come to deliver lectures on special topics, and members of the staff at St. Elizabeth's will include lecturers and members of the medical departments of the Army, the Navy, the Public Health Service, the United States Veterans' Bureau and the U. S. Department of Agriculture.

Federal Hospitalization Plan

The seven or more departments of the government operating federal hospitals in different parts of the country will be consolidated under one responsible head, according to plans of the Secretary of the Treasury, who will probably make such recommendation to Congress within a short time. The Secretary is planning to submit to Congress a special report now being drawn up by the chairman of the Treasury Consultants on Hospitalization, Dr. W. A. White, which proposes a federal unification of hospitalization. At present, the government is operating hospitals located all over the United States under numerous and dissociated control, including the Army, Navy, U. S. Public Health Service, the Interior Department, the U. S. Veterans' Bureau and others. These authorities should be centralized, according to the report being prepared by Dr. White and his committee of physicians and surgeons, who have been serving the government without pay. A federal plan for hospitalization should be carried forward with an eye not only to the present, but

also to the future, the report will point out, taking into consideration the need for old soldiers' homes as veterans of the World War grow old, and the possible need for marine hospitals in case the projected merchant marine develops as expected. The idea of such a federal plan is approved by Brig.-Gen. Charles E. Sawyer, chief coordinator of the federal Board of Hospitalization. This board, while performing some of the functions of a central head for the various hospital agencies of the government, does not have enough power to handle a program of widespread control, lacking sufficient authority from Congress. One of the difficulties in the administration of the present hospital program has been the zeal of the various department heads to forward their own particular organizations. The federal Board of Hospitalization, which acts as official adviser to the President in all hospital matters, consists of the present officials in charge of dissociated control: Brigadier-General Sawyer, chief coordinator; Col. Charles E. Forbes, director of the U. S. Veterans' Bureau; Dr. W. A. White, chairman of the Treasury consultants; Surgeon-General Ireland of the United States Army; Surgeon-General Stitt of the United States Navy; Surgeon-General Cumming of the U. S. Public Health Service; Gen. George H. Wood of the National Homes of Disabled Volunteer Soldiers, and Charles M. Burke, commissioner of Indian affairs.

The White committee report on a comprehensive federal plan for hospital management will not only outline, in general, what such a reorganization would be able to do for the future of government hospitals and government beneficiaries of all kinds, but will also be backed by a mass of documentary evidence collected by the committee in its extensive study of the problem since March, 1921, when the committee was named by Secretary of the Treasury Mellon. The report will give a list of the hospitals built by the committee in cooperation with the supervising architect's office, under Assistant Secretary of the Treasury Clifford, in the construction of which the committee expended $18,600,000, appropriated under the so-called Langley bill. Another part of the White report bearing directly on the necessity of a centralized federal hospitalization plan will include the studies which the consultants made preliminary to giving their advice on the location, site and character of these hospitals. Not only will this federal centralization be recommended, but the report will also propose cooperation of the states in the matter of hospitals.

Withdrawal of Army Officers from Veterans' Bureau

Regular Army officers on duty with the U. S. Veterans' Bureau have been withdrawn by order of Secretary of War Weeks. Four of these officers will be relieved immediately, while the others will be permitted to remain with the Veterans' Bureau until several weeks have elapsed. Those officers who will be relieved immediately are: Lieut.-Col. Roger Brooke, chief of consultants; Lieut.-Col. Paul S. Halloran, in charge of inspection section, medical division; Major Raymond W. Bliss, assistant chief, hospital division, all three of whom are medical officers; and Major George P. Ahern of the employment service, rehabilitation division. The following officers will remain on duty for a short time with the U. S. Veterans' Bureau, although they will be withdrawn under Secretary of War Weeks' order: Lieut.-Col. R. L. Reeves, assistant director in charge of rehabilitation; Lieut.-Col. R. U. Patterson, Medical Corps, in charge of the medical division, and Major John G. MacDonnell, who has been liaison officer between the War Department and the Veterans' Bureau.

Changes in Veterans' Bureau

Reorganization of the administration of the U. S. Veterans' Bureau was effected by Col. Charles R. Forbes this week through changes in many of the important executive posts. Col. George E. Ijams of Baltimore was named executive officer of the bureau to succeed Dr. T. Hugh Scott, who, at his own request, was transferred to be commanding officer of the Muskogee, Okla., hospital. Colonel Ijams has been chief of the district organizations in the bureau. His successor has not yet been named. To succeed Col. Robert U. Patterson, who has been withdrawn from the bureau to his duties in the regular Army, Dr. L. B. Rogers, who is now inspecting hospitals in the Philippines, was appointed as assistant director in charge of the medical division. Dr. P. C. Rawles of the medical service, Dr. B. C. MacNeil of the inspection service and Dr. E. A. Turner of the administrative force of the medical division were assigned to service in the field.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 1, 1923.

The Increase of Cancer

All statistics seem to show an apparent increase of cancer. The recently issued report of the registrar-general for Scotland for the year 1921 gives the mortality due to cancer as 122 for each hundred thousand of the population, a rate higher than that of any previous year. The health officer of Kent also states that in 1921 the death rate from cancer was the highest on record in the county, 133 for each hundred thousand. In 1910, the rate was 90, so that possibly an increase of nearly 50 per cent. has taken place. In both Scotland and Kent, cancer caused a higher mortality than any other disease excepting heart disease, and in the former country the rate exceeded that of tuberculosis by 50 per cent. The usual factors controlling reports of cancer deaths should, of course, be taken into consideration.

Research in Diabetes

The directors of a business firm (Ashton & Parsons) have made a gift of $13,000, to be paid in instalments of $2,000 a year over a period of six and one-half years to Guy's Hospital, to be spent in research into diabetes mellitus and other related diseases of metabolism. The money will be used to provide for the services of an additional worker in the hospital, to aid the investigations into the preparation and use of "insulin," the substance discovered by Banting and Best at Toronto University.

Milk Regulations

The ministry of health has issued regulations prescribing conditions under which milk may be sold, under four special designations. In the production of "Grade A milk" the herd must be kept separate from all other animals, marked for identification and registered. Every animal must be examined once every three months by a veterinary surgeon approved by the ministry. If an animal shows any evidence of disease likely to affect the milk, it must be removed from the herd. If tubercle bacilli are found in the milk, the producer must take all the necessary steps to ascertain which animals are diseased, and remove them from the herd. The milk must either be bottled at the dairy farm or be consigned from the dairy in an unventilated sealed container, with the address of the dairy on it, the day of production, and the words "Grade A milk." The milk must be delivered to the consumer either (*a*) in bottles with a tightly fitting disk and a cap overlapping the lip, so fastened as to form a complete seal; or (*b*) in containers of no less capacity than 2 gallons, closed with a tightly fitting cover and sealed. The milk must not be treated with heat at any stage.

"Grade A (tuberculin tested) milk" must be produced under the same conditions, with the additional regulation that every animal in the herd must be tested with tuberculin at intervals of six months. No animal must be added to the herd without having been tested with tuberculin in the preceding three months. Reactors are to be removed from the herd forthwith.

"Certified milk" is the highest grade. It is produced subject to all the foregoing conditions with the additional regulation that all the milk is to be bottled on the farm immediately after production in the manner described above.

"Pasteurized milk" must be produced by means of approved apparatus and methods; the milk is to be retained at a temperature of from 145 to 150 F., for at least half an hour and immediately cooled to 55 F. or lower. It is not to be

heated more than once or otherwise treated. "Flash" methods are not allowed.

The bacteriologic standards required are that at no time before delivery to the consumer shall these standards be infringed:

	Maximum Number of Bacilli for Each C.c.	B. Coli Absent in
Grade A	200,000	0.01 c.c.
Certified	30,000	0.10 c.c.
Pasteurized	30,000	0.10 c.c.

In instructions to the licensing authorities, the ministry suggests that samples for bacteriologic examination shall usually be taken about once a month. Producers of the specially designated milk must be licensed and the licenses may be revoked because of unfavorable reports.

PARIS

(From Our Regular Correspondent)

Dec. 29, 1922.

The Centenary of Pasteur

Many ceremonies have marked the celebration of the centenary of Pasteur, but the three most significant in this country were those that took place at the Academy of Medicine, the Pasteur Institute and the Sorbonne.

At the Pasteur Institute were gathered the relatives and the pupils of the great scientist; also the delegates of all the societies to which he belonged. Arrangements for the celebration that was held at the Sorbonne were made by the Association générale des étudiants de Paris, under the chairmanship of M. Léon Bérard, minister of public instruction, and of M. Paul Strauss, minister of public health. Many delegates from schools and colleges—also several foreign delegates, were present.

At the Academy of Medicine addresses were delivered by the president, Professor Béhal, and by Professors Delezenne, Widal, Delbet, Wallich, Barrier and Calmette.

PASTEUR'S CONTRIBUTIONS TO BIOLOGY

As well expressed by Professor Delezenne, never has biology undergone so decided a revolutionary process as that which marks the advent of Pasteur. He delved into the infinitesimally small things of life, and his researches shed new light on the constitution of matter, and even extended to the limits of the great problem concerning the origin of living matter, the fundamental characteristics of which he associated with molecular dissymmetry and the subtle modifications that Nature so readily accomplishes but which the chemist can never produce. If Pasteur's life work may be said to have won the admiration of men because of the many blessings that it has brought to humanity, it is perhaps in the field of general biology that we can best measure its amplitude; for its scope and its practical value are, to a great extent, dependent on the light it has shed on the most essential problems of life.

PASTEUR'S CONTRIBUTION TO MEDICINE

In his discourse, Professor Widal pointed out the profound transformation that the discoveries of the great scientist had brought about in medicine. "All was obscurity and confusion as to the origin of transmissible diseases, when suddenly all became clarified through the light of his genius." The science of medicine is indebted to Pasteur for methods and technical procedures which are so exact and so perfect that nothing is done in any branch of bacteriology, which does not seem like a ritual repetition of Pasteurian procedures. Sterilization of material for study, cultivation of bacteria in culture mediums, isolation of micro-organisms in pure culture, differentiation of anaerobic and aerobic species, and reproduction of diseases by the inoculation of animals, are some of the methods which Pasteur created and which have transformed our methods of medical research.

PASTEUR'S CONTRIBUTIONS TO SURGERY

According to the idea brought out by Professor Delbet, Pasteur gave to surgery the most splendid gift that it has ever received; namely, operative safety. The conquests of modern surgery have become possible through the work of Pasteur. But Delbet pointed out that the endeavor to combat infection by means of antisepsis is not based on a genuine Pasteurian doctrine; for, though Pasteur at first attached great importance to contamination through the air, he very soon found that the air contains few bacteria, and he reached the conclusion that infection is transmitted mainly by contact. It was in the direction of asepsis—sterilization by means of heat—that Pasteur hoped to see surgery develop. Delbet quotes these words of Pasteur to show how the scientist outlined the program of the surgeon:

> If I had the honor of being a surgeon, convinced as I am of the dangers to which the germs that are found on the surface of all objects expose us—more particularly in the hospitals—not only would I take care to use only instruments that are perfectly clean, but, after having subjected them to a rapid flaming, I would use only lint, bandages and sponges that had previously been exposed to hot air of a temperature from 130 to 150 C., and I would use only water that had been subjected to a temperature of from 110 to 120 C.

By his remarkable intuition, Pasteur had caught a glimpse of the rôle of devitalized tissues, which, at a later period (during the World War), was to attract the attention of surgeons. In speaking of wounds infected with *Vibrio septicus*, Pasteur wrote:

> But if, under such conditions, a single blood clot or a single fragment of dead tissue remains in some recess of the wound, . . . immediately the septic germs will give rise, in less than twenty-four hours, to an infinite number of vibrios through multiplication by cell division, which are capable of producing a fatal septicemia in a short time.

It was not until the middle of 1915 that surgeons began to carry out, in the treatment of wounds, the systematic resection of devitalized tissues, and this marked a veritable transformation in the evolution of wound treatment. Lesions which, at the beginning of the war, without being cleansed or having the dead tissue removed, were treated with an antiseptic, dragged along, if death did not result, for weeks and months, leaving fistulas and weakness in their train, whereas they healed in from ten to twelve days when treated by resection of dead tissue, and no sequels resulted. Five hundred thousand men, wounded in 1918, returned to the front before the declaration of the armistice. Here, as well, the surgeons simply learned to apply the teachings of Pasteur.

PASTEUR IN RELATION TO OBSTETRICS

In obstetrics, as in medicine and in surgery, the discoveries of Pasteur mark the beginning of a new era. As early as 1847, it is true, Semmelweis had recommended that the physician attending in childbirth should wash his hands with chlorinated lime before touching his patient, and as the result of this precaution the mortality from puerperal fever had dropped to around 1 per cent. But this discovery had no echo, unless it was at Edinburgh, where Simpson followed this example. It was not until twenty years later that Pasteur, by teaching a more accurate conception of the etiology of puerperal fever, brought about radical changes in the treatment of puerperants and made almost negligible the mortality from puerperal infection, which had formerly ranged from 25 to 50 per cent.

PASTEUR'S INFLUENCE ON PUBLIC HEALTH IN GENERAL

In 1879, Pasteur took up, in his vineyard at Arbois, a study of the origin of yeasts that cause the fermentation of grape juice. By covering the grapes with cotton, for some time before they mature, or by protecting them with glass, he found that he could prevent the introduction of yeast spores by the air, the wind and insects, and the juice of these grapes did not ferment, whereas the juice of grapes ripened in the

open air ferments soon after it is extracted. From this observation he drew at once the following conclusion:

> Are we not justified in believing, by analogy, that the day will come when preventive measures, easy of application, will put an end to these scourges which, appearing suddenly, bring terror and sadness to a whole people, such as yellow fever and bubonic plague?

Calmette rightly designates this prophecy as wonderful; for, less than a quarter of a century later, yellow fever and the bubonic plague ceased to be, along with cholera, dread-inspiring experiences of humanity.

It was these studies on fermentations, on so-called spontaneous generation, and on the diseases of silkworms that enabled Pasteur to establish the bases of his germ theory, which has been so fruitful of results; for, with the discovery of the attenuation of virus, vaccination against chicken cholera, anthrax, swine erysipelas and rabies, it was destined, from 1885 on, to overthrow all old medical theories and to put on a solid foundation the prophylaxis of transmissible diseases, thus giving a more permanent basis to public health administration.

Calmette states, not without a certain bitterness, that the notion of contagion, enunciated in England by the Public Health Act of 1875, did not receive official recognition in France until the passage of the sanitary act of Feb. 15, 1902. It is regrettable that Pasteur's own country was not the first to profit by the beneficent results of his researches. Calmette therefore expresses the hope that the hundredth anniversary of the birth of the founder of modern hygiene may become for the people of France a time for the taking of an inventory of stock, as it were, in order to ascertain how the work of France to safeguard the public health compares with what has been done by other nations which are not so neglectful of their human capital and of human welfare.

THE COUNTRYSIDE WHERE PASTEUR WAS BORN AND REARED

The department of Doubs, in which Pasteur was born, celebrated the centenary of its most illustrious son by ceremonies which took place at Arbois, Dôle and Besançon. At 5 o'clock, on the evening of December 27, from all the belfries of the department burst forth loud and reverberating peals in tribute to the memory of Pasteur, born just one hundred years before. Many people from the countryside, joined by strangers from a distance, flocked to Dôle to pay a visit to the old home and birthplace of the great scientist.

The Publication of Pasteur's Works

Until recently, the works of Pasteur were scattered through the reports of proceedings of the Academy of Sciences and of the Academy of Medicine or were found in reviews and scientific journals. Dr. Pasteur Vallery-Radot, physician to the hospitals of Paris and grandson of the famous scientist, has now collected them, and the world is greatly indebted to him for his enterprise. Pasteur's complete works will constitute seven volumes. The first two volumes have just appeared in a magnificent edition published by Masson et Cie. Volume I comprises the treatises on chemistry and physics, and also the articles on crystallography, which mark Pasteur's entrance into the scientific world. These are the studies which led him to investigate the subject of fermentations and which formed the basis of his later discoveries; for all of his studies seem to be linked together, and, as has been well expressed by Roux, "Pasteur had already revolutionized medicine without having made a special study of any disease." We can also feel grateful to Dr. Pasteur Vallery-Radot for having adopted the chronological order in the publication of each series of works of his illustrious grandfather, for this permits us to follow very exactly the evolution of Pasteur's thought. Thus, in reading Volume II, which is devoted to his researches on fermentations and on so-called spontaneous generation, we can see how, by his investigations on molecular dissymmetry, Pasteur was led to the study of fermentation, and how, at a later period, his researches on so-called spontaneous generation were, as he himself stated, only a "necessary digression" from his work on ferments. Vallery-Radot truly says that the reader is spellbound by the wealth of induction and deduction, which is peculiar to Pasteur's genius.

The Future Pasteur Museum

In connection with the ceremonies held, December 27, at the Pasteur Institute, visitors were accorded permission to inspect the apartment that the scientist occupied on the ground-floor of his residence. In the drawing room, a museum, or, rather, the beginnings of a museum, could be found, for it is the intention of the relatives and pupils of Pasteur to restore ultimately all the furniture to the position that it formerly occupied. Later, therefore, a visit to this apartment will enable one to gain a retrospective view of Pasteur's work as it actually developed. Even at present, we find in this collection enclosed in glass cases interesting evidences of the studies of the master. We see the models carved in wood by Pasteur himself to illustrate his work in crystallography; also retorts, cylinders, mortars and flasks used in demonstrating the nonexistence of spontaneous generation. In some of these were found—intact and still sterile—the solutions just as Pasteur had left them. Here we see the microscopes that he used, and there, photographic copies of pages of his notebooks in which he had jotted down his observations.

PRAGUE

(From Our Regular Correspondent)

Dec. 20, 1922.

Institute of Hygiene

Dr. Pavel Kucera, formerly professor of hygiene at the universities of Cracow and Brno, delivered a lecture on the organization of the institute of hygiene before the medical society in Prague, December 11. Professor Kucera was designated director of this institute, which the Czechoslovak government is building, with the help of the International Health Board of the Rockefeller Foundation. The institute of hygiene, the construction of which must be completed before the end of the year 1926, according to the contract between the Rockefeller Foundation and the government, will not only be a service laboratory for the health service of the country, but will also serve as a teaching center for the education of all members of public health personnel, primarily of health officers. The construction of the first half of the institute was started this fall. It will contain institutes for the production of serums, Pasteur vaccine for rabies and smallpox vaccine. The buildings will be completed before next winter, and the institutes will be transferred into the permanent buildings from the temporary quarters that they are now occupying. After the first half of the institute has been put into operation, the construction of the second half will be started, in order not to exceed the time limit given in the contract. After its completion, the institute will comprise eleven departments, including a bacteriologic, food and drugs laboratory, and departments of school hygiene, industrial hygiene and housing.

The medical profession is following the plans for the construction of the institute of hygiene with keen interest. The only objection comes from the medical faculties, which see an important medical institution growing beside the university and claiming for itself a rôle which up to the present time was fulfilled by the medical faculty; namely, the education of health officers. Although it is anticipated that the organization of a school of hygiene in the institute of hygiene will meet opposition on the part of the university professors, the

ministry of health, under whose auspices the institute is being built, has resolved to put its cause through in the interest of an advance in the education of public health officers. The personnel for the institute of hygiene is being trained largely in the United States, because scholarships have been granted by the Rockefeller Foundation to the Czechoslovak government for this purpose.

Public Health Education

A subdivision of public health education will be created in the ministry of health and physical education, beginning Jan. 1, 1923. Czechoslovakia will be the second country on the European continent to have such a subdivision established in connection with the health service, Jugoslavia being the first. Dr. Charles Driml, who will be appointed chief of the subdivision, has studied the methods of public health education in the United States. Since his return to this country, he has organized several popular exhibits, and has written public health educational pamphlets. One of the most effective means for the education of schoolchildren in public health matters is plays with marionettes, which are very popular in this country. Dr. Driml conceived the idea of approaching the schoolchildren in this way for the purpose of improving their health habits. The plays are being translated into English by the Junior Red Cross, and parts of them have already been published in Canadian magazines.

Control of Venereal Diseases

The ministry of health started organizing social and health centers in larger cities two years ago. It was the intention of the ministry to create institutions that would become its tools for the eradication of the social diseases. The character of these institutions was preventive, as it was conceived by the originator of the idea, Dr. Francis Hamza, who is now professor of social medicine in Brno. The centers were started as tuberculosis dispensaries, and, owing to the activities of the American Red Cross, twenty cities have added preventive child welfare stations. Three of them have opened also venereal disease dispensaries. It has been very difficult since the beginning to limit the functions of these centers entirely to the prevention of disease. The physicians who were appointed as chiefs of the centers were educated as practitioners of curative medicine, and, naturally, began to treat disease in the centers. This, of course, made the medical profession antagonistic to the centers in many places. This was especially true in the tuberculosis clinics, where the tuberculin treatment was administered. But the relationship of the medical profession and the tuberculosis dispensaries is improving, because the physicians in the dispensaries limit their functions chiefly to prevention; and slowly the questions of social medicine are being made understandable to the medical profession through the committee on social medicine, which is a very active body, composed largely from young physicians.

The activities of the child welfare centers since the beginning have been limited to medical control and supervision of the children, and therefore did not arouse the antagonism of the medical profession. The question was much more complicated with the venereal disease dispensaries, where it is very difficult to perform merely preventive functions in the station. The ministry of health has prepared a tentative program for these stations, which is built on the experiences of Germany. It is the intention to conduct these venereal disease stations as institutions for the control of venereal patients, who are forced to continue treatment under the new venereal disease law until they are declared free from infection by the physician. The functions of the dispensary will be limited only to the control of the patients, and no treatment will be given. If his case comes under the insurance act, the patient will be sent to the insurance practitioner of the club to which he or she belongs. If there is no one who can assume the expenses of the treatment, the dispensary will send the patient to a medical practitioner, who will receive from the funds of the dispensary the fees for the treatment of the patient, according to the scale of the insurance.

The ministry plans to open such a dispensary in Moravska Ostrava, which is a big industrial city, and it wishes to use the experience gained in this city in the erection of similar dispensaries in other large cities. In this way, the health centers will be brought in closer contact with sickness insurance, and at the same time machinery will be created for the execution of the new venereal disease law, for which the routine public health administration is too cumbersome. These social and health centers are financed through subsidies from the ministry, with contributions from local funds. It is planned to transfer the expenses for maintenance of these centers to the counties, after the reorganization of the administration of the country has been completed.

BERLIN

(From Our Regular Correspondent)

Dec. 30, 1922.

Racial Physiognomy

Last month, Professor Hellpach, instructor in psychology at the polytechnic in Karlsruhe, and now minister of public instruction in Baden, delivered an address before the Heidelberg Naturhistorischmedizinische Verein on the influence of heredity and environment on physiognomy or facial expression. As distinct from the inherited manifestations and qualities of constitution and race, which are comprised under the term "genotype," Hellpach distinguishes a "phenotype," which is characteristic of the tribe or clan. Marks of the phenotype become stamped on the face at about the fifteenth year of age, and are dependent on the place of residence or the environment. The influence of the genotype breaks its way through and manifests itself also in children born in the new environment of parents of a different stock or even in children who were brought to a new region in their early childhood. Hellpach referred to statues of German painters (using for the Franconian face Albrecht Dürer and for the Swabian-Alemannic type, Hodler and Hans Thoma) and also to photographs to illustrate the phenotypes of the two ancient tribes that form the population of Baden. He called attention in the Franconians of the old Palatinate in northern Baden to the triangular shape of the face, the pointed chin, the long nose, the protruding cheek bones and the correspondingly marked "zygomatic shadow," giving rise, if the soft parts are well developed, to a heart shape or to an oval form with the smaller end of the oval projected downward, whereas, among the Swabian Alemannians in southern Baden, a broad chin and flat cheeks, rising perpendicularly, give the face a square-set or rectangular appearance; or, if the soft parts are more fully developed, a full-moon face, so-called, results. Hellpach thinks that the cause for a phenotype existing in a pure form for centuries lies in the peculiarities of the dialect; or, not so much in the dialect as such, as in the accentuation and the dynamics of the spoken language. The position of the accent, the type of the accent, and the mode of speaking (whether rapid or slow), occasion in the various dialects a different type of "mimokinetics" (play of the features) and a varying innervation of the organs of speech, all of which factors, in turn, serve to model the face accordingly, a more lively motion of the lips being characteristic of the more "labial" dialect of the old Palatinate, and a more set and fixed expression about the mouth being typical of the predominantly guttural Alemannic dialect. Simultaneous with the adoption of the dialect, there is an habitua-

tion to the tribal temperament or disposition going on, whereby an inborn or hereditary temperament may likewise be transformed. The effects of imitation and adaptation, which are such significant factors in human life, serve to explain the fact that the phenotype of the tribe prevails and appears even in the children of immigrants of different tribal origin. This assimilation of immigrants by the old native stock is, in Hellpach's opinion, the explanation of the riddle why, in spite of wars, revolutions and marked shiftings of the population, the ethnical boundaries of the old German tribes have remained essentially the same for a thousand years. It would appear, therefore, that tribal instincts and tribal peculiarities are not so much a physical as they are a mental product, and we find herein a confirmation of the words of the poet that it is the mind that molds the body.

The Wretched Living Conditions Among the German People

December 15, the physicians of Berlin, with numerous representatives from all parts of the country, held a special meeting, under the chairmanship of Geheimrat Rubner, at which attention was directed to the grave damage to health that has already been caused or is imminently impending as the result of the increasing poverty of the people. Professor His, an ordinarius of the medical faculty, delivered an address on "The Marked Decline in the Standards of Living Among the German People," while Dr. Dippe, the chairman of the Deutsche Aerztevereinsbund, spoke on the subject of "The German Physicians at the Bedside of the German People." The social hygienist Professor Krautwig, who is a member of the city council of Cologne, addressed the assembly on the theme, "German Children in Need; What Is to Be the Fate of the German People?"

Age Distribution of the Population of Bavaria

Recent statistics published by the public health department of Bavaria give a clear conception of the markedly changed age distribution of the population as caused by the large number of men killed in the war and the decrease in the birth rate. The influence of the decline in the birth rate on the age distribution is so great that the loss of men in the war has affected, for the most part, only the relationship of the sexes for the age group 15 to 30. A long time will elapse before normal conditions are restored.

AGE DISTRIBUTION OF MEN AND WOMEN
(1,000 BASIS)

	German Empire, 1910		Bavaria, 1914		Bavaria, 1919	
Age Group	Men	Women	Men	Women	Men	Women
0- 1	26.3	25.0	26.8	25.7	14.2	12.5
1-15	322.0	311.1	324.8	314.2	294.7	267.6
15-30	263.8	256.8	249.2	246.6	263.7	280.7
30-60	317.6	321.3	320.9	323.3	342.9	347.9
60-70	45.9	54.6	51.1	58.1	55.2	57.7
Over 70	24.4	31.2	27.2	32.1	29.3	33.6
	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)

Personal

Prof. Dr. Alt, chairman of the *Aerztekammer* (chamber of physicians) of the province of Saxony, for many years the director of the Landes-Heil- und Pflegeanstalt in Uchtspringe, died in Magdeburg, December 28, at the age of 62.

In honor of the seventy-fifth birthday of Professor Flügge, who was for many years the director of the Hygienische Institut in Berlin, Professor Kayserling, the tuberculosis expert of Berlin, who is connected with the Robert Koch Foundation for Combating Tuberculosis, has founded a Flügge Fund for tuberculosis research, with an initial subscription of 100,000 marks.

April 1, Professor Küstner, director of the University Women's Hospital in Breslau, will retire from active service, in conformity with the provisions of the old age pension law. Prof. L. Fraenkel of Breslau has been called to succeed him.

MEXICO CITY

(From Our Regular Correspondent)

Jan. 11, 1923.

Yellow Fever

During the year 1922, forty-one cases of yellow fever were reported in Mexico, as compared with 115 in 1921 and 505 in 1920. Besides the decrease in the number of cases reported, which, of course, does not represent the full number of cases, the decrease in the area where the disease prevailed must be considered. In 1920, many cases occurred in towns both on the Atlantic and on the Pacific coasts; in 1921, there were outbreaks in several towns on the Eastern coast, while in 1922, there were only three cases at Puerto Villarta, on the Pacific coast, and the remainder at Pánuco, Tampico and Tuxpam, on the Gulf coast. Not one indigenous case was reported from Vera Cruz, for many years a noted yellow fever focus.

Child Welfare Congress

Early this month the second Congreso Mexicano del Niño was held in Mexico City. Because of the number and the contents of the papers submitted and the interest in its transactions, the congress proved a great success. The third congress will be held in Mexico City in 1925. The civil engineer Félix F. Palavicini was appointed president and Dr. Salvador Uribe y Rivera, secretary. His address is 1 Calle de Iturbide, No. 11, Mexico City.

Mexican Medical Association

The Mexican Medical Association has just held its first scientific meeting with a fair degree of success. An encouraging feature was the attendance of several physicians from other states who had stayed away from previous meetings. The present session was devoted to a celebration of Pasteur's centennial. The ceremonies were in charge of Drs. Ramón Icaza and D. M. Vélez, president and vice president, respectively, of the association. New officers were appointed. The president-elect for the next two-year term is Dr. Fernando Zárraga.

Personal

Dr. Fernando Ocaranza, former president of the Mexican Society of Biology, has been appointed corresponding member of the Buenos Aires Biologic Society, a branch of the Argentine Medical Association.——A banquet was recently tendered Drs. Ulises Valdés and Gabriel Malda, by a number of local physicians.

Marriages

VERNE CARLTON HUNT, Rochester, Minn., to Miss Mona Sibeck of Little Rock, Ark., December 28.

GLENN ROBERT CUTTER to Miss Josephine Gage, both of Council Bluffs, Iowa, at Sabula, recently.

PAUL N. JEPSON, Rochester, Minn., to Miss Dorothy Cannon of Haddenfield, N. J., December 28.

MICHAEL S. MCGAURAN to Miss Catherine T. Reardon, both of Lawrence, Mass., December 26.

CHARLES GOLDMAN, Brooklyn, to Miss Helen Louise Goodman of Waco, Texas, December 3.

HELMER ENGH, Gillespie, Ill., to Miss Helen Runnestrand of Hettick, Wis., November 30.

JOHN MILTON DODSON, Chicago, to Mrs. Mary Hyde Webb of Detroit, January 17.

ALBERT C. LUCAS, Castle, Okla., to Miss Grace Philpots of Okemah, November 20.

OTTO FRENZEL to Miss Matilda Myers, both of Pigeon, Mich., January 14.

WILBERT HALL to Miss Lillian May, both of Mitchell, Canada, recently.

VICTOR R. LAPP, Hamilton, Canada, to Miss Edna Ward of Toronto, recently.

Deaths

Herbert Clark Emerson, Springfield, Mass.; Medical School of Harvard University, Boston, 1893; at one time city bacteriologist; for eight years served as city physician and member of the board of health; president of the Springfield Hospital; member of the Massachusetts Medical Society; formerly president of the Engineering Society of Western Massachusetts, the Hampden County Tuberculosis and the Hampden County Public Health associations; chairman of the Connecticut Valley section of the American Chemical Society; for nearly twenty years maintained an analytic and consulting laboratory in the city; aged 57; died, December 6, from pulmonary congestion.

James D. Hillis, Lafayette, Ind.; University of Michigan Medical School, Ann Arbor, 1880; member of the Indiana State Medical Association; formerly professor of electrotherapeutics at Purdue University School of Medicine, Indianapolis; secretary of the city board of health and past president of the Tippecanoe County Medical Society; aged 69; died, January 4, at the Albert E. Stern Sanatorium, Indianapolis, from cerebral hemorrhage.

Robert P. Bush, Horseheads, N. Y.; University of Buffalo (N. Y.) Department of Medicine, 1874; member of the Medical Society of the State of New York; Civil War veteran; formerly member of the state legislature; at one time member of the board of education, school commissioner, and county coroner; aged 80; died, January 8, in a hospital at Elmira, from pneumonia.

Versile Mornington Gates, Elk Rapids, Mich.; Detroit College of Medicine and Surgery, Detroit, 1910; member of the Michigan State Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 36; shot himself while suffering from melancholia, December 29.

Edward Mercur Williams ✠ Sioux City, Iowa; University of Pennsylvania School of Medicine, Philadelphia, 1905; member of the Philadelphia Neurological Society, American Neurological Association and the American College of Physicians; aged 41; died, January 8, from pneumonia.

Joseph Pettit, Philadelphia; Jefferson Medical College of Philadelphia, 1890; formerly secretary of the Pennsylvania College of Dental Surgery; practiced dentistry in Philadelphia for more than a half a century; aged 73; died suddenly, December 31, from heart disease.

Edgar Clarence Cowles, Cleveland; Cleveland University of Medicine and Surgery, 1897; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 47; died, January 1, from accidental asphyxiation while repairing his automobile.

Aaron W. Cooper, Fowlerville, Mich.; University of Michigan Medical School, Ann Arbor, 1868; Civil War veteran; for seventeen years postmaster of Fowlerville; aged 82; died, December 7, from injuries received when he was knocked down by an automobile.

Charles P. Cook New Albany, Ind.; Medical Department University of Louisville, Louisville, Ky., 1883; member of the Indiana State Medical Association; formerly surgeon to St. Edward's Hospital; aged 64; died suddenly, January 7, from heart disease.

Delmer Neil Hayden, Fossil, Ore.; Willamette University Medical Department, Salem, 1913; served in the M. C., U. S. Navy, during the World War; aged 36; was found dead in bed, January 7, with a handkerchief saturated with chloroform on his face.

Henri Louis Pache ✠ Burlington, Vt.; University of Vermont College of Medicine, Burlington, Vt., 1900; epidemiologist and head of the venereal disease department of the state board of health; aged 48; died, January 7, following a long illness.

Luther Jackson Weldon ✠ Denver; Denver and Gross College of Medicine, Medical Department University of Denver, 1905; on the staffs of St. Luke's, St. Anthony's and the County hospitals; aged 46; died, January 8, from angina pectoris.

Albert Shelley, Baltimore; Jefferson Medical College of Philadelphia, 1895; member of the Medical Society of the State of Pennsylvania; served in the M. C., U. S. Army, during the World War; aged 56; died, January 6.

John Saunders Carter, Dallas, Texas; University of the South Medical Department (Sewanee Medical College), Sewanee, Tenn., 1906; member of the State Medical Association of Texas; aged 49; died, January 7.

Frederick W. Beilstein, Chicago; Northwestern University Medical School, Chicago, 1900; member of the Illinois State Medical Society; aged 45; died, January 17, at the Wesley Memorial Hospital, from peritonitis.

Edmund Lawrence Maurer, Brownton, Minn.; University of Minnesota Medical School, Minneapolis, 1904; member of the Minnesota State Medical Association; aged 44; died recently, in a Minneapolis hospital.

William Ezra Graham, Calgary, Alta., Canada; Trinity Medical College, Toronto, Ont., 1897; M.R.C.S., England, and L.R.C.P., London, 1901; F.R.C.S., Edinburgh, 1907; aged 47; died, November 12, from carcinoma.

Morris Edwin Derfler, Novinger, Mo.; Washington University Medical School, St. Louis, 1909; member of the Missouri State Medical Association; aged 50; died, October 30, from chronic nephritis.

Michael Edward Connell, Oshkosh, Wis.; Rush Medical College, Chicago, 1881; formerly superintendent of the Milwaukee County Hospital, Wauwautosa; died, January 8, from cerebral hemorrhage.

Edwin Guilford Annable, Concord, N. H.; University of Vermont College of Medicine, Burlington, 1880; member of the New Hampshire Medical Society; aged 82; died, November 12, from senility.

Christopher C. Bippus, Pittsburgh; Jefferson Medical College of Philadelphia, 1889; member of the board of education; aged 57; died suddenly, January 7, from heart disease, at Shelbyville, Ind.

Helen B. Carpenter, Seattle; Woman's Medical College of New York Infirmary for Women and Children, 1886; formerly practitioner in Boston; died in December, aged 62, from heart disease.

John Henry Thornton ✠ Lansing, Iowa; Rush Medical College, Chicago, 1879; local surgeon for the Chicago, Milwaukee and St. Paul Railroad; died, January 1, from cerebral hemorrhage.

Andrew Jackson Deas, Augusta, Ga.; Medical College of Georgia, Augusta, 1893; member of the Medical Association of Georgia; aged 59; died, October 30, following a prostatectomy.

George Chandler Bassett, Detroit; Detroit College of Medicine and Surgery, 1895; member of the Michigan State Medical Society; aged 48; died, December 17, from acute endocarditis.

Robert H. De Lap, Richland Center, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; member of the State Medical Association of Wisconsin; aged 76; died, October 30.

Margaret Elizabeth Clarke, Brooklyn; New York Medical College and Hospital for Women, New York, 1881; aged 79; died, December 22, at the Peck Memorial Hospital, from carcinoma.

Frank H. Ruhl ✠ Lansdowne, Md.; Baltimore University School of Medicine, 1892; formerly health officer of the Thirteenth District (Baltimore County); aged 60; died, January 6.

Timothy D. Beach, London, Ohio; Starling Medical College, Columbus, 1873; Bellevue Hospital Medical College, New York, 1875; aged 80; died, December 29, from heart disease.

Charles H. Emig, Melrose, Mass.; St. Louis College of Physicians and Surgeons, 1899; for twenty-five years a Methodist minister; aged 70; died suddenly, January 6, from heart disease.

Thomas Purcell, Erie, Pa.; University of Buffalo (N. Y.) Department of Medicine, 1888; member of the Medical Society of the State of Pennsylvania; aged 71; died, December 8.

Nathaniel Joseph Minter, Chattanooga, Tenn.; Tennessee Medical College, Knoxville, 1895; member of the Tennessee State Medical Association; aged 59; died, December 30.

Andrew J. Cavender, Murrayville, Ga.; Atlanta Medical College, 1893; aged 63; died, December 27, at the home of his daughter in Gainesville, from cerebral hemorrhage.

Thomas B. Hammer, Des Moines, Iowa; Physio-Medical College of Indiana, Indianapolis, 1881; aged 74; died, December 28, from injuries received when he fell on the ice.

Edmund A. Boas, Chicago; Rush Medical College, Chicago, 1884; member of the Illinois State Medical Society; aged 60; died, January 17, from chronic nephritis.

Samuel Stewart Snarr, Mount Jackson, Va.; Maryland Medical College, Baltimore, 1909; member of the Medical Society of Virginia; aged 42; died, December 12.

Katherine W. Corcoran ✠ Chicago; College of Physicians and Surgeons, Chicago, 1902; aged 52; died, January 17, at the West Side Hospital, from diabetes mellitus.

Tryon Y. Howard, Niagara, Ky.; Medical Department University of Louisville, 1867; Civil War veteran; aged 84; died, January 4, from carcinoma of the stomach.

Hugh J. Death ✠ Franklin, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 65; died, January 7, at the Miami Valley Hospital, Dayton, from cholelithiasis.

John Newton Chism, Jamestown, Tenn.; Vanderbilt University Medical Department, Nashville, 1891; aged 68; died, December 5, from uremia, at Nashville.

John Andrew Brown, Sparta, Ga.; University of Georgia Medical Department, Augusta, 1908; aged 36; died, January 6, from pneumonia, following influenza.

Peter Alexander McDougall, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1864; aged 83; died, December 11, from senility.

Sarah W. Devoll, Portland, Me.; New England Female Medical College, Boston, 1872; aged 87; died, October 30, in Boston, from pneumonia.

Armistead Green Taylor, Amelia, Va.; Medical College of Virginia, Richmond, 1867; Civil War veteran; aged 81; died, January 2, from senility.

William Alfred Jones, Kingston, Ont., Canada; Western University Faculty of Medicine, London, 1914; aged 30; died, November 27, in Toronto.

Otho Pierce Franks, Churubusco, Ind.; Fort Wayne College of Medicine, 1904; aged 48; died suddenly, January 2, from heart disease.

Frank H. Thomas, Belle Center, Ohio; Pulte Medical College, Cincinnati, 1898; aged 60; died suddenly, December 29, from heart disease.

John Joseph Egan ✠ Chicago; College of Physicians and Surgeons, Chicago, 1905; aged 44; died, January 11, from angina pectoris.

James Applebee, Parry Sound, Ont., Canada; Victoria University Medical Department, Toronto, 1887; aged 66; died, December 11.

John W. B. Scott, Hamilton, Ohio; Physio-Medical Institute, Cincinnati, 1874; aged 73; died, January 5, from cerebral hemorrhage.

William J. Heizer ✠ Lebanon Junction, Ky.; Medical Department University of Louisville, 1883; aged 72; died in November.

Frank W. Hess, Estelline, S. D.; Detroit Medical College, 1880; Civil War veteran; aged 72; died, December 25, from carcinoma.

William Wylie Hunter ✠ Anamosa, Iowa; State University of Iowa College of Medicine, Iowa City, 1886; aged 64; died, January 8.

Ernest B. Boyes San Francisco; Trinity Medical College, Toronto, Ont., Canada, 1896; aged 49; died, November 7, at Denver.

Robert Harry Tatum, Chattanooga, Tenn.; Chattanooga Medical College, 1899; aged 48; died, December 7, from influenza.

Andrew Marshall, Chillicothe, Mo.; Miami Medical College, Cincinnati, 1876; aged 86; died, November 9, from senility.

Elmer Ellsworth Wilson, Hayt Corners, N. Y.; Jefferson Medical College of Philadelphia, 1888; died suddenly, January 3.

Edward Alexander Holland, San Antonio, Texas; Rush Medical College, Chicago, 1884; aged 62; died, November 2.

Edmund S. Fessenden, Albany, Wis. (licensed, years of practice); aged 87; died, December 15, from senility.

George H. Mehard, Wampum, Pa.; Jefferson Medical College of Philadelphia, 1882; aged 65; died, January 5.

John Edwin Barringer, Armada, Mich. (licensed, years of practice); aged 81; died, October 27, from senility.

John M. Deam, Dayton, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 71; died, January 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

QUAYLE'S "BOB-WHITE HABIT SINKERS"

An Alleged Cure for Morphinism and Other Drug Addictions

Charles H. Quayle, M.D., of Madison, Ohio, "Medical Director," of the "Dr. Quayle Sanitarium, a Retreat for Drug Addicts, Alcoholics and Cigarette Inveterates" and "Specialist in Drug and Liquor Addictions" has for some years been exploiting an alleged cure for chronic morphinism "and any other drug addiction." THE JOURNAL has received inquiries from physicians and laymen, of which the following are specimens:

This from a physician in Georgia:

"Kindly advise me as to whether Dr. Quayle's treatment for drug and alcoholic addictions is safe, ethical and all that he claims."

An Ohio physician wrote:

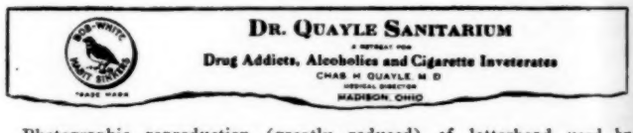
"Just received the enclosed [Quayle advertising matter.—ED.] through the mail. Looks like some more bait for the medical profession. What is it?"

And this from the advertising manager of a group of high-grade lay publications:

"An advertising agency has offered to us a contract for the Quayle Treatment, purporting to be a sure cure for the morphin habit. In response to my letter declining the advertisement I have received a voluminous statement with alleged testimonials, all attempting to prove that this particular morphin cure is reliable and that it is a great public benefaction masquerading as a commercial proposition. I am sending the booklet herewith and if, without inconvenience, you can give me the facts about it, I may be able to keep it out of some other publications. Unless you can give it a clean bill of health (which I greatly doubt) it will not go into our publications."

While a Mississippi physician wrote some time ago:

"Today I received a letter from a Dr. Charles H. Quayle who styles himself 'Specialist in Drugs and Liquor Addiction.' This gentleman proposes to license me to use his special treatment in my sanatorium and to give me the right to use such treatment in my 'district,' as he calls it. . . . If the A. M. A. has any information about this gentleman, I shall be very glad if you will let me have it."



Photographic reproduction (greatly reduced) of letterhead used by Dr. Quayle's sanitarium.

THE CURE IN 1914 AND 1915

In 1914 Quayle was sending out to physicians from Madison, Ohio, a circular letter regarding the alleged wonders of "Dr. Quayle's Guaranteed Three Day Drug and Liquor Treatment." According to this letter, Quayle "by unremitting study, experiments and observation" had at last "discovered an absolute cure for the relief of the craving for *all Drugs and Liquors.*" Further, this alleged treatment was —at that time—"not for sale to any layman or person who wishes to treat himself"; it could "only be purchased by a Physician" and was "for the use and advantage of the medical profession only." Quayle stated that he wished to impress on physicians the fact that his "Medicine is not a product of a Sanitorium [*sic*], nor is it protected by a patent." Had it been patented, of course, it would not have been a secret—as it is. Quayle said, also—then—that there would be no advertising of the remedy "except in the Medical Journals." Today we find Quayle's product advertised in the *Police Gazette* and similar literary productions. Finally, the Quayle letter explained that the price of the treatment to the physician would be "$25.00 with the understanding that no Physician is to administer it for less than $50.00 per patient."

This, as has been stated, was in 1914. In March, 1915, Quayle was sending letters to sanatoriums from Cleveland, Ohio, and offering to license the physicians in charge so that their institutions could have a monopoly on the use of Quayle's treatment in a given "district." The "advantages" that were offered to those who would enter into this arrangement were set forth at length in the "follow-up" matter that came to those who evinced interest in the scheme. The first alleged advantage was that it permitted the physician who entered into the contract "to control the situation"; second, it enabled the physician "to become a specialist . . . and thereby secure considerably larger fees than he could in ordinary practice"; third, the fee for the treatment "must not be less

MORPHINE NEW HOME TREATMENT FOR ALL
Drug and Alcoholic Addictions. Doctor:—Treat these cases at home privately yourself. No pain, very little discomfort. Positive results. Enclose stamp for full information. Dr. Quayle Sanatorium, Madison, O., Box 7.
MORPHINE
Drug Addictions
Alcoholism
Treated by the "Quayle Method."
A safe and easy way. Results guaranteed.
DR. QUAYLE SANITARIUM
Chas H. Quayle, M.D., Medical Director
Dept. 508
Madison, Ohio
VIGORATOR.
MORPHINE
New Home Treatment
Send Stamp for Book of Information.
DR QUAYLES SANITARIUM, MADISON OHIO, Dept. Q
TAPE-WORM

Some typical Quayle advertisements, greatly reduced. The upper left appeared in a recent issue of the *American Journal of Clinical Medicine;* the lower left in the *Police Gazette,* that on the right in *American Medicine.*

than $150.00" and "10 per cent. of the gross receipts from patients" was to be sent "to the home office for use for local publicity" under the direction of an advertising agency; fourth, the physician was told that to become Quayle's representative, would place him "in direct contact with humanitarian movements in the community" and he would "secure the active cooperation of organizations looking toward moral uplift"; fifth, the "representative" would receive the support of Quayle's organization "along every material line."

Additional "follow-up" matter told of the methods that could be used "to develop business." First, there was a certain portion of the royalty that Quayle received that was to be "devoted to local publicity in your territory." This publicity would "not advertise the individual" but would advertise "Dr. Quayle's Three Day Treatment." Then there would be circulars and booklets supplied by Quayle; also "display notices in newspapers." Further, it was suggested that editorial write-ups and notices might be secured in local newspapers which might also be "induced to run testimonials in connection therewith."

The contract to be entered into between the physician who wanted to use Quayle's nostrum and C. H. Quayle himself was an interesting document. It is too long to give more than the opening paragraphs:

"THIS AGREEMENT made and entered into this.....day of....., 1915, by and between Dr. C. H. Quayle and.....

"WITNESSETH: In consideration of the sum of Twenty-five Hundred Dollars ($2500.00) paid to the said Dr. C. H. Quayle, contemporaneous with the execution of this agreement, the receipt of which is hereby acknowledged, said Dr. C. H. Quayle gives, grants and conveys to said.....the perpetual and exclusive license to use within the limits of.....what is known as Dr. Quayle's Three Day Treatment for the drug and liquor habits, including the right on the part of said.....to advertise said treatment in the prosecution of the business of ....sanitarium at..... The above license is given and granted by said Dr. C. H. Quayle and received by said .....upon the following conditions, to-wit:"

The conditions were briefly: *First,* that the doctor entering into the agreement would not use the Quayle Treatment elsewhere than in the sanatorium; *second,* that he should within ten days of the date of the agreement receive fifty packages of "Dr. Quayle's Three Day Treatment" and would guarantee to pay Quayle $50.00 a treatment for all additional "treatments" ordered; *third,* the physician, on the fifteenth of each month, should pay a certain advertising agency named in the contract 10 per cent. of the gross receipts of the sanatorium; *fourth,* that Quayle would, through the advertising agency, spend a certain amount "in advertising and publicity"; *fifth,* that the physician would administer the "treatment" according to Quayle's directions; *sixth,* that the license was not transferable and, *seventh,* that in default of the payments the agreement could immediately be revoked and terminated.

As further follow-up material, prospective licensees received copies of form-letters that the licensee might send to physicians and also a form-letter that would do to send "to patient prospects." Then there was a specimen of newspaper copy showing how a write-up could be furnished the local newspaper telling of the opening, in a certain locality, of "an institution which will perform a humanitarian service" and which was "licensed to use a scientific remedy so successfully used for years, Dr. Quayle's Three Day Treatment for Drug Addiction and Alcoholism."

If the physician resisted all these blandishments, the final series of the follow-up came asking if there was "any particular reason" why the Quayle Treatment had not been adopted and suggesting that the local physician might "arrange with the newspapers for taking care of a few charity patients." But let us quote from the letter:

"How would it be Doctor, if you could arrange with the newspapers for taking care of a few charity patients? It could then be so arranged so that Dr. Quayle could go to your Sanitarium and put through these patients for you which would be the means of your getting a lot of Publicity through the newspapers on account of demonstration treatments."

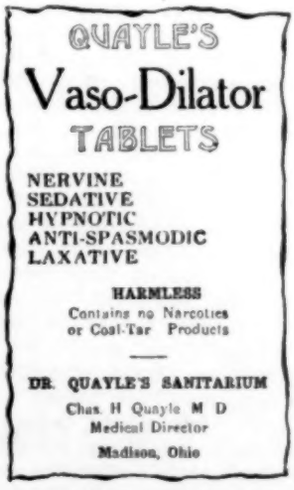
The letter closed with the näive suggestion:

"This will be an elegant opportunity for you to do a good work for humanity and make money besides."

NOW A MAIL-ORDER TREATMENT TO THE PUBLIC

All this, as has been stated, was in 1915. Since then Quayle has evidently changed his method of exploitation and the "medicine" that, at that time, was "not for sale to laymen or persons who wished to treat themselves" is now to be found advertised in the *Police Gazette, Smart Set,* etc.

One of Quayle's newspaper advertisements, "Morphin, New Home Treatment: Send Stamp for Book of Information" was answered not long ago and, in reply, came a form letter signed "Charles H. Quayle, M.D., Medical Director," stating that a booklet was enclosed and also a history blank that must be filled out when ordering treatment. The letter stated further that "the 'HABIT SINKERS' cause no pain, sickness, nor the loss of time; are harmless, contain no NARCOTICS or other habit-forming drugs and are easy to take." Moreover, it said that "the amount of Morphin or the length of time taken makes no difference"; it closed with the statement that the price of the treatment is $25.00 and "All Treatments sent in plain packages."



"Quayle's Vaso-Dilator Tablets" are, apparently, a side-line. They are said to be indicated in such conditions as "Aphrodisia," "Epilepsy," "Painful Menstruation," "Prostatitis" and "Shell Shock." The price asked is $10.00 a thousand.

Accompanying this form letter was a printed sheet containing two testimonials. Then there was a printed "clip sheet" similar to that used in sending free publicity matter to newspapers. It was written in the usual newspaper style and bore the heading "Morphin Habit Cure Discovered—Dr. Charles H. Quayle of Madison, Ohio, Hailed as Miracle Man in Medical World." The article bore the Madison, Ohio, date line for January 10 (no year given), which was the date of the "release." The article is simply a puff of Quayle, "The Miracle Man." It is alleged to have been written by "Charles E. Cake, Managing Director, Anti-Narcotic League of America." Efforts to find out who Cake is have been just as unavailing as has been the endeavor to discover something about the "Anti-Narcotic League of America." Whether this imposingly-named organization exists for any other purpose than that of being used as an advertising accessory by

C. H. Quayle we have been unable to determine. Cake's article closed with this paragraph:

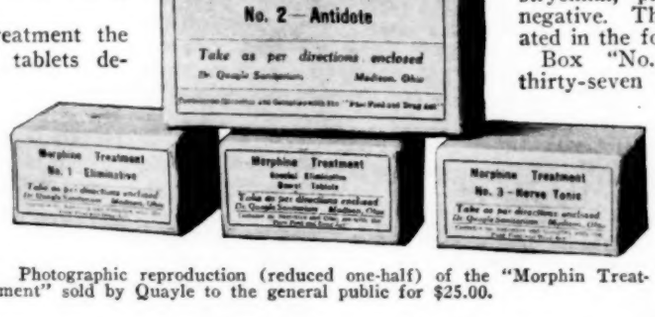
"The American Medical Association stated that it was hoped sincerely that he would give his drug addiction cure to the fraternity before he died, but Quayle isn't thinking about this just now."

It should not be necessary to say that the American Medical Association has never expressed any "hope" regarding C. H. Quayle, and it might be suggested that the alleged author of this piece of fiction should become "Managing Director" of an "Anti-Ananias League."

With the letter came a booklet telling how Quayle discovered the formula "after years of investigation and research," but taken up mainly with testimonials common to advertising matter of this kind.

A "TREATMENT" IS ORDERED

Twenty-five dollars was sent to Quayle by a layman for one "treatment" which consists of four boxes of pills. One of the boxes contains three chocolate-coated pills and one capsule; another box contains twelve white-coated tablets; in a third are thirty-seven red-coated pills, while the fourth—the alleged "Antidote"—contains 323 yellow-coated tablets. A small leaflet accompanies the boxes, giving "Directions for Taking." The sufferer is told, first, to take the three chocolate-coated pills and the capsule and twelve hours later to "take two teaspoonfuls of Sal-Hepatica." He is told, further, that the bowels should move two or three times a day and, if necessary to accomplish this, one of the white-coated tablets should be taken each night at bedtime, followed the next morning by "two teaspoonfuls of Sal-Hepatica." He is warned to "use no acids while taking medicine."



Photographic reproduction (reduced one-half) of the "Morphin Treatment" sold by Quayle to the general public for $25.00.

As the second step in the treatment the patient takes the yellow-coated tablets described as the "Antidote." The number of these tablets to be taken at a dose varies with the amount of morphin that is being used. It is insisted, however, that the patient must take these tablets "every three hours day and night for six days"; "set your alarm clock if necessary." On the seventh day the number of "Antidote" pills is to be diminished by one, but is still to be taken "every three hours, day and night." On the eighth and ninth day one of these tablets is to be taken "every three hours, day and night."

The sufferer is warned that should he "vomit or feel sick to stomach" or should he "experience seeing imaginary objects" the "Antidote" tablets should be discontinued until the symptoms have passed. He is also told not to attempt to read while taking these tablets "as pupils are dilated." Further, he is told that should "any nervousness or desire for morphin" be felt after the ninth day, the "Antidote" tablets should be continued "up to the 12th, 15th or 21st day or until you feel sure of yourself."

At the same time that the addict is taking the "Antidote" tablets he is told to gradually diminish the amount of morphin he has been in the habit of taking. He is instructed to put in a bottle the total amount of morphin that he would ordinarily use in nine days, figure the number of doses this would be and then put that many teaspoonfuls of water into the same bottle. When the time comes to take the dose of morphin one teaspoonful of the solution is taken and a teaspoonful of water is added to the bottle in its place. The poor victim is told never to add any more morphin to this bottle but to continue diluting the solution as long as he is taking the "Antidote" tablets.

The tablets in the fourth box are to be taken, one after each meal, "after there is no more desire for morphin and you have finished with the antidote tablets." The patient is told, also, that while taking the treatment, the diet should consist of milk, cereals, eggs and vegetables only, and these taken sparingly and that a glass of water should be taken every two hours. Finally:

"It is also necessary to have some will power and determination as there are times when you will feel weak (from the loss of your accustomed drug) and discouraged. But if you will follow directions exactly as laid down you will get the desired results."

A complete Quayle treatment was turned over to the A. M. A. Chemical Laboratory for analysis. The laboratory report follows:

LABORATORY REPORT

One original package of "The Quayle Treatment" (Dr. Quayle Sanitarium, Madison, Ohio) was submitted to the chemical laboratory for examination. The package consisted of a box in which were four smaller boxes labeled as follows:

"No. 1—Eliminative." (Contained 3 chocolate-coated pills and 1 capsule.)
"No. 2—Antidote." (Contained 323 yellow-coated tablets.)
"No. 3—Nerve Tonic." (Contained 37 red-coated pills.)
"Special Eliminative Bowel Tablets." (Contained twelve white-coated tablets.)

The box "No. 1—Eliminative" contained three chocolate-coated pills and a capsule of grayish powder. The pills contained a soft mass which gave a positive reaction for emodin-bearing (laxative) drugs; mercurous chlorid (calomel) was absent. The capsule contained a gray powder of metallic mercury and excipients such as found in certain modifications of Mass of Mercury ("blue mass") and so-called "blue mass powder."

The box "No. 2—Antidote" contained 323 yellow-coated tablets which disintegrated in water with difficulty. These tablets contained, essentially, a laxative element such as cascara, and gave tests for atropin. Tests for strychnin, pilocarpin and scopolamin were negative. The atropin is probably incorporated in the form of an extract of belladonna.

Box "No. 3—Nerve Tonic" contained thirty-seven red-coated pills containing strychnin.

The box "Special Eliminative Bowel Tablets" contained twelve white-coated tablets. In these was found mercurous chlorid (calomel); they also yielded a positive test for emodin-bearing drugs.

Summed up, the "Quayle treatment" for "Morphin or Any Other Drug Addiction" is, essentially, (1) active elimination by cathartics; (2) the administration of atropin during the stage of morphin withdrawal and (3) the use of strychnin at the close of the "treatment."

It is evident from the laboratory findings that this alleged "absolute cure," said to have been discovered by Quayle "after years of investigation and research" and "by unremitting study, experiments and observation," is no more a cure than could be devised by any physician who is familiar with modern medical literature. The analysis fails to show a single element of originality in it. The scheme of having a quantity of morphin equal to several days' dosage dissolved in water to be periodically diluted as the patient uses it, is one that has been tried and found wanting—for generations. No physician will believe that a patient suffering from chronic morphinism can cure himself by any such method as that exploited by Quayle. That an occasional morphinist might cease the use of the drug coincidentally with the taking of the Quayle treatment is conceivable, although inherently improbable. For the one individual who possesses the almost superhuman will-power to give up the drug to which he is enslaved while treating himself, there must be hundreds to whom any method of self-treatment must be a more or less brief period of physical agony followed by the almost inevitable relapse with the mental suffering that such a relapse implies. "Play the game fair and do not cheat if you wish to win. . . . it will require some grit and will power on your part," says Quayle in the letter that accompanies the $25.00 worth of pills. The ghastly irony of this exhortation will be understood by those who have seen the suffering of a morphinist even when being treated under ideal institutional surroundings.

The mail-order sale of a secret mixture of pills and tablets for the alleged self-cure of morphinism would not be a business to be proud of, even were it conducted by laymen. Here, however, is a case in which a physician is engaged in the traffic. In the eyes of the intelligent public, these facts do more to discredit the medical profession and to bring organized medicine into disrepute than all the diatribes ever written by the followers of cults, the exploiters of nostrums or other enemies of scientific medicine.

Correspondence

"THE CARE AND FEEDING OF INFANTS"

To the Editor:—In one of your valuable series of articles on the care and feeding of infants (THE JOURNAL, Jan. 13, 1923, p. 109) the author says "Schick (*Ztschr. f. Kinderh.* **27**:57, 1920) has found that he can prevent most of this initial weight loss by the feeding of sugar solutions during these first days, giving as high as 1 ounce (30 gm.) of sucrose during the twenty-four hours."

In a short paper (*New York M. J.*, Jan. 9, 1915) I reported briefly the results which I had obtained by giving 200 newborn infants 1½ ounces of a 10 per cent. lactose solution every three hours, and was able to show that the initial weight loss could be reduced one half; that nearly twice as many infants regained their birth weight at the end of ten days, and that the so-called inanition fever could be prevented. Further investigation makes it seem likely that this fever is not due to dehydration alone. The increased water intake probably aids in the elimination of certain toxic products through the genito-urinary tract. The addition of lactose probably changes the bacterial activity in the intestine from a proteolytic to a fermentative type, and by inhibiting the growth of proteolytic organisms prevents the formation of toxic products which are the cause of the fever.

CHARLES HERRMAN, M.D., New York.

GOAT'S MILK IN INFANT FEEDING

To the Editor:—The first article in the series on "The Care and Feeding of Infants" was read with much interest. I am located in the hill country of Texas, to which section many infants are sent, especially during the hot summer months. Several years ago my attention was called to the milk of the Swiss goat as being superior in the feeding of these infants, most of whom have some disturbance of the gastro-intestinal tract. We have given goat's milk a careful trial, and with such excellent results that for two years the hospital has maintained its own herd for the feeding of infants and in the Sippy treatment of ulcers.

Goat's milk is normally alkaline, and is easier of digestion, forms smaller curds, and conforms more nearly to human milk than does cow's milk. The fact that the goat is almost immune to tuberculosis is a factor in its favor.

Many institutions now use goat's milk, and almost every city of any size has its source of supply. The southwest is raising these "Ford cows" in numbers, and the demand keeps way above the supply.

One feature that appealed to me in some rural cases seen in consultation was that the babies were 25 miles away from an ice supply, so that the goat was milked every three hours, and the milk given warm and fresh, with no chance of bacteria to multiply and outside contamination far less liable.

WILLIAM LEE SECOR, M.D., Kerrville, Texas.

[COMMENT.—The subject is discussed in a forthcoming article of the series.—ED.]

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.
PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

New Hampshire September Examination

Dr. Charles Duncan, secretary, New Hampshire State Board of Medical Registration, reports the written examination held at Concord, Sept. 14-15, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 11 passed and 1 candidate, an osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Loyola University		(1917)	1
Eastern University School of Medicine		(1913)	1
Harvard University		(1918)	1
Tufts College Medical School		(1920), (1921)	2
Columbia University		(1921)	1
College of Phys. and Surg. in the City of New York		(1890)	1
Long Island College Hospital		(1907)	1
Woman's Medical College of Pennsylvania		(1917)	1
University of Vermont		(1894), (1921)	2
	FAILED		
Osteopath			1

Maine November Examination

Dr. Adam P. Leighton, acting secretary, Maine State Board of Registration of Medicine, reports the written examination held at Portland, Nov. 14-15, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University		(1922)	79
Harvard University		(1921) 84, (1922)	81, 87
Jefferson Medical College		(1922)	86
McGill University, Montreal, Quebec		(1919)	82

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Harvard University		(1901)	New Hamp.
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1921)	Penna.

Book Notices

CHLOROFORM ANÆSTHESIA. By A. Goodman Levy, M.D., M.R.C.P., Physician to the City of London Hospital for Diseases of the Chest. With a Foreword by Arthur R. Cushny, M.D., LL.D., F.R.S., Professor of Materia Medica and Pharmacology in the University of Edinburgh. Cloth. Price, 7 shilling and 6 pence. Pp. 159, with 9 illustrations. London: John Bale, Sons & Danielsson, Ltd., 1922.

This book contains chapters on pharmacology and toxicology, physiologic considerations of respiration, deprivation of oxygen and asphyxia, the mechanism of the absorption and elimination of chloroform, the dosage of chloroform, death under chloroform, the administration of chloroform, the physical principles of methods and apparatus, clinical considerations, and delayed chloroform poisoning. The discussions are short and to the point, and show a comprehensive knowledge of facts. The writer has apparently succeeded in his appointed task of preparing a volume which is a real contribution to medical science. One of the most valuable chapters of the book, especially for the anesthetist, is the one dealing with deprivation of oxygen and asphyxia. In view of the fact that many anesthetists are advocating the

use of oxygen as a vehicle, it is interesting to read, on the administration of oxygen, that "in the course of normal pulmonary ventilation with an effective circulation, the oxygen in the inhaled air is more than sufficient to provide oxygen to the tissues, and it is therefore evident that the administration of an excess of oxygen can serve no useful purpose under normal conditions," and that it can at most add 2 per cent. by volume to the oxygen in the blood. The writer states that the method of introducing an anesthetic vapor into the blood by inhalation possesses at least two salient advantages which account for the dominant position that it occupies at present. The first is its performance without the aid of surgical procedure, the second its capacity for rapid adjustment. The pulmonary route is a physiologic device for the easy passage of gases to and fro between the alveoli of the lungs and the blood, so that adsorption is rapid, and excretion hardly less so. There is a delicate response to a little increase or a little decrease in the concentration of the vapor inhaled, and this concentration may be so easily adjusted that it is difficult to conceive of any method which is likely to rival it in these relations. The author states that the liability of death from chloroform is generally estimated at about one in 3,000 administrations, but it is probably considerably higher; in 13,393 administrations of chloroform annotated by the Anesthetics Committee of the British Medical Association, the number of deaths was eighteen. At least ten of these were directly due to the chloroform, yielding a mortality of one in 1,339. These statistics are based on the reports of physicians who were accustomed to the administration of anesthetics, so that deaths from gross negligence can be ruled out of account. In conditions of good health, chloroform is much more dangerous than other anesthetics. In grave conditions it still remains the least safe anesthetic, but the disparity between it and other anesthetics is far less marked than in health. In relation to status lymphaticus, the author says it is certain that the majority of chloroform deaths are not associated with any such condition; thus, in the registrar-general's report for 1916, in 164 deaths under chloroform or a mixture containing chloroform, the condition of status lymphaticus was noted in twenty-two. It was found only once in death under other anesthetics, so that it appears evident that the chloroform was the primary cause of death and not the condition of status lymphaticus, whatever subsidiary part this may play when it coexists. Many American anesthetists and surgeons will take issue with the author in the statement that the treatment of acidosis or delayed chloroform poisoning with sodium bicarbonate is physiologically unsound, and that the chief indication is to maintain the strength of the patient until vomiting ceases. Graham demonstrated, through his researches, that the administration of sodium bicarbonate simultaneously with chloroform prevented the development of acidosis or delayed poisoning. Others have reported the recovery of patients critically ill (acidosed) following chloroform anesthesia by the intravenous injection of sodium bicarbonate. There is a good index and a very good bibliography. The author is fully conversant with foreign literature, and frequently mentions American authors.

LEITFADEN DER RÖNTGENOLOGIE. Herausgegeben von Prof. Dr. med. et phil. H. Gerhartz. Paper. Price, 1230 marks. Pp. 290, with 386 illustrations. Berlin: Urban & Schwarzenberg, 1922.

This work is really a set of monographs on the several branches of roentgen-ray endeavor, diagnostic and therapeutic, by various authors who have joined with Gerhartz in producing the book. Several of the contributors are among the leading roentgenologists of Germany; Forssell, who supplies the chapters on the digestive tract, is from Stockholm, and is regarded as an authority on this branch of the work. In general, the entire work deserves favorable comment. In particular, one is surprised at the very poor quality of reproductions of roentgenographic illustrations (excepting Forssell's on the stomach and the colon). Very few of the illustrations are satisfactory, failing, as they do, to give the reader a proper proof or example of the text; thus, they are completely unconvincing and entirely miss the point sought. The line diagrams, on the contrary, are excellent, and it seems that the book would measure higher had the author resorted to this form of illustration throughout. An unusual presentation of conditions of the thoracic cage, in which lesions of ribs and sternum are detailed, leads the book. The chapters on the heart by Gerhartz are especially noteworthy, as is his work on the pulmonary and pleural structures. Goetze supplies a section on abdominal diagnoses with the aid of gas inflation, while Forssell's chapters on the digestive tract may safely be regarded as the last word in gastro-intestinal roentgen-ray diagnosis. This portion of the book deserves much praise. Thost's chapter on the head, sinuses and throat is also of the highest order. The deep therapy section is written by Seitz, Wintz and Dreyfuss, authors of the highest standing in this line. These chapters are rather short and condensed as compared with several recent German publications on roentgen-ray therapy, which are impressive in point of voluminosity. The boiled down information as presented in this work is especially acceptable to practical roentgenologists. Some of the newer ideas of roentgen-ray dosage are presented and described. The authors work on a basis of biologic dosage. The total skin tolerance being assumed as 100 per cent., the carcinoma dose they figure to be 110 per cent., the sarcoma dose as from 60 to 70 per cent. Benign lesions call for smaller percentages of "H. E. D." (*Haut Einheits Dosis*), which is the 100 per cent. or skin tolerance. Treatment types are divided into (*a*) castration dosage and (*b*) carcinoma dosage. They describe the technic for various lesions, among which is that of the climacteric, a treatment of established value widely recognized in Europe, but which has received less attention in this country than it deserves. The book will be found of considerable value as a reference work, since the collaborators are of such large experience and advanced standing in their respective lines in roentgenology.

ÉTUDES NEUROLOGIQUES. Par Georges Guillain, Professeur agrégé à la Faculté de Médecine de Paris. Paper. Price, 25 francs net. Pp. 469, with illustrations. Paris: Masson et Cie, 1922.

This book is made up of fifty-six previously published papers, most of them in collaboration with Guy Laroche or other assistants. Some of the papers are of lasting value, others naturally of only transient interest. All are the result of careful observation and serious work, few of great practical value to the general practitioner. They embrace subjects in nearly every department of neuropathology (such as poisons of the nervous system, lesions of cranial and spinal nerves, atrophies, spinal fluid, syphilis and epidemic encephalitis. The neurologist will find some unusual and peculiarly interesting things, such as the spinal cord form of trypanosomiasis, the meningeal form of brain tumor, Argyll Robertson pupil in nonsyphilitic lesions, compression of the cord in Recklinghausen's disease, a peculiar infection characterized by icterus and meningeal symptoms, and an apneic form of tabetic crisis.

PRINCIPLES AND PRACTICE OF X-RAY TECHNIC FOR DIAGNOSIS. By John A. Metzger, M.D., Roentgenologist to the School for Graduates of Medicine, Medical Department, University of California, Southern Division, Los Angeles. Cloth. Price, $2.75. Pp. 144, 61 illustrations. St. Louis: C. V. Mosby Company, 1922.

Roentgen-ray laboratory technicians will find this book of material assistance in their routine work. The text is clear and concise. The author has included exposure formulas which will give the less experienced technician a basis on which to work in the taking of each different anatomic part. Under the subject of apparatus the Bucky diaphragm is briefly described, but scant mention is made of Potter's invaluable contribution to roentgen-ray art, which is the result of his untiring efforts in making the original Bucky diaphragm a practical accessory for every day use. The photographic illustrations of the various positions speak louder than a word description of the several poses. Under nasal sinus technic one wonders why the author does not describe Law's position for projecting the sphenoidal sinuses, instead of the more difficult and awkward position that is illustrated. For the greater part, the book may be accepted as a reliable exposition of modern roentgen-ray procedure. Since most laboratory assistants have learned roentgen-ray technic only by experience, one feels that this book has a considerable value in the field which it covers.

Medicolegal

Mistreatment of Furnisher of Blood for Transfusion

(Jeter v. Davis-Fischer Sanitarium Co. et al. (Ga.), 113 S. E. R. 29)

The Court of Appeals of Georgia, Division No. 1, in affirming a judgment in favor of the sanatorium company, sustaining the latter's demurrer to the plaintiff's petition, says the plaintiff alleged that a physician, after he had operated on a certain patient in the sanatorium, stated that his patient was in need of blood transfusion. The plaintiff proposed that the blood be taken from her, and, after a test of her blood had been made, the physicians and nurses of the sanatorium placed her on the operating table, telling her that the taking of the blood from her arm would not amount to more than a pin scratch; that the blood would be taken with a needle and she would scarcely know it. She told them not to cut her arm, but to take the blood with a needle only. Nevertheless, without her knowledge, they made an incision in her arm, and with forceps and their bare fingers pulled up a vein and took the necessary blood for the transfusion from a vein. After that, the incision was sewed up and she was put to bed. In consequence of the treatment she received, she was unable to use her arm, it had become stiff, and her health had been almost ruined. She alleged further that the physicians and nurses most grossly neglected and maltreated her after the arm had been unlawfully cut by them; that they all knew the condition she was in, and, wilfully and without cause or reason, failed and refused to dress her or her arm. Wherefore, she laid her damages at $30,000. But the court holds that her petition clearly showed that there was no liability on the part of the sanatorium. The plaintiff volunteered her services, not to the sanatorium, but to a patient who was being treated at the sanatorium, and to the physician treating the patient. It was not alleged that it was part of the duty of the sanatorium to furnish the plaintiff's blood to the patient or to the physician. The acts complained of were the acts of a physician, and not of the hospital of which the plaintiff's friend was a patient. There was nothing alleged that showed that the sanatorium was responsible to the plaintiff for her pain and her suffering. It was not alleged that the sanatorium employed the specific services of any person to take the blood which she volunteered to give to her friend from her arm. The petition showed that if there was any liability, it was liability of the physician and not of the sanatorium.

Bookkeeper Without Power to Employ Physician

(West Lumber Co., v. Nash (Tex.), 243 S. W. R. 704)

The Court of Civil Appeals of Texas says that plaintiff Nash, a physician, sued the defendant lumber company for medical attention and room in a sanatorium for an employee of the defendant, named Sneed, who had been shot, though not while in the performance of work for the company. The theory on which the plaintiff predicated his right to a judgment was that, after Sneed had been at the sanatorium for two days, one Reynolds called the plaintiff over the telephone, said that he was speaking for the lumber company, and told him to do what he could for Sneed, and "they would pay his bill." Reynolds testified that he was employed as bookkeeper for the company, but he denied that it was within the scope of his authority to employ a physician to render services to its employees. He further denied that he had employed the plaintiff or said the company would pay Sneed's bill. It was not enough to support a judgment for the plaintiff to show that Reynolds was the bookkeeper of the defendant, but, to support the judgment, the proof must also show that the plaintiff was authorized by the defendant to perform the services for which he sued. There was no evidence showing that Reynolds was authorized by the defendant to employ the plaintiff to perform such services, or that he had ever performed any services for the defendant that could have induced or did induce the plaintiff to believe that he had such authority, but, to the contrary, the undisputed evidence showed that he in fact had no such authority. If it is conceded that Reynolds told the plaintiff to give Sneed the services performed by him, saying that the lumber company would pay for his services, this employment of the physician would not bind the company. It is well settled that those dealing with an assumed agent of another are bound, at their peril, to ascertain not only the fact of the agency, but also the extent of the agent's authority, and that in case either is controverted, as in the present case, the burden of proving that the assumed agent was in fact the agent, and had the authority to act in the capacity claimed for him, is on the plaintiff. Manifestly, no such burden was met in the present case, and, the facts appearing to have been fully developed, the judgment recovered by the plaintiff is reversed, and a judgment rendered for the defendant.

Society Proceedings

SOUTHERN SURGICAL ASSOCIATION

Thirty-Fifth Annual Meeting, held at Memphis, Tenn., Dec. 12-14, 1922

(Concluded from page 206)

Accidental Ureteral Injuries During Pelvic Operations

DR. JOHN M. MAURY, Memphis, Tenn.: The remedial measures that may be employed in these cases are: (1) removal of the ligatures; (2) implantation of at least one ureter into the bladder; (2) uretero-ureteral anastomosis on one or both sides; (4) nephrostomy, and (5) severing one or both ureters and bringing the proximal ends to the skin surface. Removal of the ligatures is the procedure of choice. In order of choice, ureterovesical implantation, uretero-ureteral anastomosis or nephrostomy may be employed. In the event of the patient's condition precluding the possibility of choice, the least time-consuming procedure must be followed, and this is nephrostomy. Double nephrostomy may be done in a few minutes, with the expectation that absorption of the ligature and canalization will result in due course of time, while the condition of the patient may make an anastomosis a formidable procedure. If canalization is not satisfactorily accomplished the patient is in good condition for anastomosis or implantation.

Spontaneous Hematoma Occurring in a Case of Spindle-Cell Sarcoma of Kidney

DR. FRANK K. BOLAND, Atlanta, Ga.: The case is unique for two reasons: first, because I have been unable to discover in the literature the report of a similar condition occurring in a neoplasm of the kidney; and second, because the rupture of the kidney and formation of the hematoma were the first signs of the disease manifested in the case. Previous to this time the patient had been in good health, and presented no symptoms that would lead one to suspect her of having anything wrong with her kidney. Apparently the rupture occurred early in the course of the disease.

Autotransfusion

DR. LUCIUS E. BURCH, Nashville, Tenn.: In a case of splenectomy for splenic anemia, the operation was difficult and bloody. The large amount of blood that was lost in the abdomen during the operation was recovered by means of expressing the contents of the abdominal packs into a glass receptacle. A little more than 800 c.c. of blood was recovered, and after this was citrated and strained through four layers of gauze, it was injected into a vein at the elbow. At the time the transfusion was started, the pulse was 140 and barely perceptible. At its completion, the pulse was 102, strong, and the patient's color was good. There was no reaction following the transfusion; operative recovery was unusually smooth, and at the end of two weeks he was able to leave the hospital and return to his home. I have used this procedure in three other cases successfully—two of ruptured tubal pregnancy, and a nephrectomy. Autotransfusion is a safe procedure, although in a limited number of cases reactions will occur. Sodium citrate is not essential. Physiologic sodium chlorid solution will make an admirable substitute,

and if neither of these is at hand, the pure blood may be reinjected. Extra-uterine pregnancy will offer the largest field of usefulness for this procedure, but in wounds of the spleen and liver, wounds of the lung producing a hemothorax, and in operations during which a large amount of blood is unavoidably lost, it will be found not only life saving but hastening postoperative recovery. Contaminated blood should not be thrown away. This blood should be given as a rectal drip. Autotransfusion may occasionally be used to advantage in certain obstetric complications, such as placenta praevia, rupture of the uterus, and cesarean section.

Sarcoma or Embryoma of the Kidney in Infants

DR. CHARLES R. ROBINS, Richmond, Va.: A boy, aged 12 months, was sent to me on account of a lump in the right side of the abdomen, which proved to be a globular tumor filling nearly the entire abdomen. It could be palpated posteriorly in the right kidney space and flank, and seemed to be somewhat attached at this point, although freely movable. The pelvis and subcostal region appeared to be clear, and the tumor projected anteriorly. A diagnosis of sarcoma of the kidney was made and operation advised, which was done two days later. The ascending colon and small intestine had become displaced to the left of the tumor. The peritoneum was incised external to the ascending colon and the kidney removed from its bed without difficulty. The pedicle was isolated, and the vessels and ureter ligated separately. At the lower pole of the kidney, an aberrant artery and vein entered. These were ligated separately. There was comparatively little bleeding, which was easily controlled, the peritoneum was sutured, and the abdominal wound was closed without drainage. The tumor was about the size of a grapefruit, and sprang from the lower pole of the kidney. The upper portion of the kidney was quite normal.

Brain Abscess

DR. HARRY HYLAND KERR, Washington, D. C.: A study of 120 cases of abscess of the frontal lobe recorded in the literature shows nearly half of them undiagnosed until the necropsy, and the mortality from this type is about 80 per cent. Persistent headache with sustained leukocytosis, and especially the presence of retinal changes indicative of pressure in cases of drained frontal sinusitis or ethmoiditis, should demand exploration. Exploration by the two-stage operation through a sterile field may be indicated. Direct drainage with a minimum of trauma should be established and not be disturbed until all symptoms have subsided. It is of paramount importance to drain a brain abscess too long rather than too short a time.

Factors of Safety in Thyroid Surgery

DR. WILLARD BARTLETT, St. Louis: I feel that I have been greatly helped in handling this difficult subject by graduated approach, classification as to operative indications, and cooperation of the internist. All patients are classified as to operative indications in one of five groups: (1) ligation of superior thyroid vessel group; (2) unilateral resection of the male subject; (3) unilateral resection of the female subject; (4) bilateral resection with wound left open, and (5) bilateral resection with complete wound closure. Three exceedingly important considerations are: (1) anesthesia, 0.5 per cent. procain infiltration with preliminary narcotics; (2) the operation performed wherever the patient's nervous system is most protected; (3) the wide open wound in the highly toxic subject. Five considerations, above all others, influence me in my estimate of the operative risk: (1) myocardium; (2) kidney function; (3) metabolic rate (relative); (4) weight (relative), and (5) self-control.

Ranula, with Comments on the Thompson Theory of Origin

DR. V. P. BLAIR, St. Louis: Thompson's hypothesis, that the deep ranula and related cysts originate from migrated positions of the cervical sinus, is sufficiently broad to explain all heretofore observed types. It offers at least a logical basis for adequate surgery. My patient had a cystic mass on the left side of the floor of the mouth, seen from within the mouth and also externally in the submaxillary region when she swallowed. The mass could be felt bimanually. Fluctuation was present. A swelling was also present on the right side, seen from within the mouth and apparently lost posteriorly in the neighborhood of the first molar. The swelling on the left side was approached from an external submaxillary region incision. A cystic mass protruded from the floor of the mouth behind the posterior edge of the mylohyoid muscle. The mass was dissected free from the hyoglossus muscle, inner internal pterygoid muscle and from the wall of the pharynx. On completion of the excision, the right sided mass had disappeared.

White Bile in the Common Duct

DRS. E. STARR JUDD and JOHN H. LYONS, Rochester, Minn.: The presence of a colorless liquid (without bile pigment) in obstructed common and hepatic ducts usually indicates increased operative risk. In the Mayo Clinic series the operative mortality was 21 per cent., in spite of cautious preoperative measures and postoperative care, including calcium and transfusions. We believe that while the mortality is high, it is probably no higher than it would be in a series of cases of complete biliary obstruction of the same duration with green bile in the common and hepatic ducts. Our nineteen cases occurred among 649 operations on the common and hepatic ducts in four years. In nine of these, the obstruction was due to stone in the common or hepatic duct, and in six to trauma at a previous cholecystectomy; in two the obstruction was due to carcinoma (one of the pancreas and one of the ampulla), and in one it was due to pancreatitis. In one instance the white bile seemed to occur as a result of cholangeitis. In no instance in which the gallbladder was present was it found to be normal. Seventeen of the nineteen patients were intensely jaundiced at the time of operation, and there had been no recent decrease in the jaundice. One patient had a biliary fistula; one was not jaundiced, although there was complete obstruction to the common duct by stone. In the latter instance, cholecystectomy and cholecystostomy with removal of the stone resulted in drainage of bile on the fourth day after operation. The patient made an uneventful immediate convalescence, but died on the thirty-second day after operation, because of acute hemorrhagic pancreatitis. Rous and McMaster have shown experimentally that white bile occurs only when the obstructed ducts are not connected with a normally functioning gallbladder, and conclude that this fluid is a secretion of the mucosa of the biliary passages which occurs with obstruction when the secretion of the mucosa of these passages is greater than its resorption. The findings in the patients observed at the Mayo Clinic bear out the conclusions that Rous and McMaster made from their experimental work. The liver does not necessarily cease to secrete bile in these cases, although it is probable that the hepatic function may be suspended for a time in certain patients and entirely reestablished later.

Errors in Home Treatment of Appendicitis

DR. FRED W. BAILEY, St. Louis: The virulence of appendicitis is not decreasing. It is because of the fact that careless, indifferent treatment obtains. In many forms of appendicular colic that are lashed into a fulminating process by purgatives, the patients would recover from the immediate attack if sanely treated, and could then be operated on without mortality. Until we know the exact pathologic condition present in each case, we cannot hope to prognosticate the outcome. The interval operation is a misnomer. The time to operate is at the earliest moment of positive diagnosis, provided talent is available and the environment acceptable.

Treatment of Diverticulum of the Esophagus

DR. CHARLES H. MAYO, Rochester, Minn.: External surgical removal in one or two stages, change of position, or obliteration are the methods of choice. If a general anesthetic is used, the sac must be well emptied before operation. About thirty years ago, while I was bringing up a large intrathoracic sac, the patient, who was under a general anesthetic, almost suffocated by the contents pouring into the trachea; he very nearly died later from bronchopneumonia. This experience led to the employment of a local anesthetic, usually procain, with some preliminary morphin, in virtually all such cases.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Chicago

December, 1922, **12**, No. 12

Symposium on Next Step for State Health Departments. E. R. Kelley. —p. 995.
Id. Emphasis Shifting from Disease Prevention to Health Promotion. W. S. Rankin, Raleigh, N. C.—p. 999.
Id. E. Martin, Harrisburg, Pa.—p. 1005.
Id. I. D. Rawlings, Springfield, Ill.—p. 1009.
Id. E. G. Williams, Richmond, Va.—p. 1012.
Measures for Control of Acute Respiratory Diseases. W. A. Evans, Chicago.—p. 1015.
Plans to Reduce High Mortality from Acute Respiratory Diseases in Winter. H. F. Vaughan and G. T. Palmer, Detroit.—p. 1022.
Mental Hygiene Service for Children of Preschool Age. A. Gesell, New Haven, Conn.—p. 1030.

American Journal of Tropical Medicine, Baltimore

November, 1922, **2**, No. 6

Final Report on Control of Yellow Fever in Merida, Yucatan, Mexico. M. E. Connor, New York.—p. 487.
*Preliminary Survey of Tropical Diseases in Massachusetts. G. C. Shattuck, Boston.—p. 497.
Porto Rico as Field for Study and Investigation of Tropical Hygiene. R. W. Hegner, Baltimore.—p. 519.
*Cultivation of Trichomonas from Human Mouth, Vagina and Urine. K. M. Lynch, Dallas, Tex.—p. 531.
Cultivation of Blastocystis and Determination of Species. K. M. Lynch, Dallas, Tex.—p. 539.
Special Entomologic Mounts. C. S. Ludlow, Washington, D. C.—p. 551.
Use of Nutrient Agar for Rearing Dipterous Larvae. R. C. Shannon, Ithaca, N. Y.—p. 555.
Experimental Investigation of Supposed Poisonous Qualities of Colorado Potato Beetle Leptinotarsa Declemlineata. F. Defiel, Minneapolis.—p. 559.
*Effect of Tartar Emetic Intravenously on Nonprotein Nitrogen of Blood. M. D. Levy and P. S. Dimmitt, Galveston, Tex.—p. 569.

Tropical Diseases in Massachusetts.—Data are presented by Shattuck which throw light on the frequency and source of such tropical diseases as are found commonly in Massachusetts. The records of the Massachusetts State Department of Health covering the period of five years from Jan. 1, 1917, to Dec. 31, 1921, inclusive, show that there were admitted: malaria, 414 cases; dysentery, 228 cases; smallpox, 137 cases; pellagra, 75 cases; uncinariasis, 33 cases; elephantiasis, 27 cases; actinomycosis, 12 cases; leprosy, 12 cases; beriberi, 5 cases; bilharziosis, 5 cases; aleppo boil, 3 cases; blastomycosis, 2 cases, and one case each of sprue and mycetoma.

Identity of Trichomonas.—Lynch is of the opinion at the present that *Trichomonas vaginalis* and *Trichomonas buccalis* have not been clearly differentiated and that they are probably one organism.

Effect of Tartar Emetic on Nonprotein Nitrogen of Blood.—In order to determine whether tartar emetic given intravenously in the dosage usually employed in treatment had any deleterious effect on the patient, Levy and Dimmitt selected six cases of varied medical ailments. Complete blood analyses were made. The patients were all on the ordinary house diet, and were ambulant. Tartar emetic, in a 2 per cent. solution, was given intravenously every other day—six doses being given—starting with 0.5 c.c. and ending with 5 c.c. It was noted that tartar emetic intravenously, even in small doses, over a comparatively short period of time, is capable of producing a decided increase in the nonprotein nitrogen elements of the blood.

Annals of Medical History, New York

September, 1922, **4**, No. 3

Guy Patin and Medical Profession in Paris in Seventeenth Century. F. R. Packard, Philadelphia.—p. 215.
Robert Talbor, Madame de Sévigné and Introduction of Cinchona. G. Dock, St. Louis.—p. 241.
Regulating Physicians in Colonial Virginia. E. Ingle, Richmond, Va. —p. 248.
Some English Worthies of Science of Interest to Ophthalmologists. B. Chance, Philadelphia.—p. 251.
Early History of Anatomy in United States. E. B. Krumbhaar, Philadelphia.—p. 271.
Some Early Observers of Albuminuria. W. Dock, Boston.—p. 287.
Medical Magic. I. H. Coriat, Boston.—p. 291.
Caduceus and Its Symbolism. R. Wilson, Jr., Charleston, S. C.—p. 301.
George Cheyne and "English Malady." W. R. Riddell.—p. 304.

Boston Medical and Surgical Journal

Dec. 28, 1922, **187**, No. 26

Improvement of Health Conditions in Rural Communities. M. V. Safford, Boston.—p. 946.
Empyema; Report of One Hundred Cases. D. S. Adams, Worcester, Mass.—p. 947.
*Comparative Luminal, Bromid, Diet and Eliminative Treatment of Epilepsy. B. L. Ashmore, North Grafton, Mass.—p. 950.
*Fibroma and Sarcoma of Ovary. Report of Two Unusual Ovarian Tumors. J. V. Meigs, Boston.—p. 952.
Lipoma Weighing Two and One-Half Kilograms, Taken from Inner Aspect of Right Arm. A. D. Kirk, Worcester.—p. 956.
*New Method for Estimation of Peptic Activity of Gastric Contents, Suitable to Clinical Application. C. W. McClure and P. L. E. Schabacker, Boston.—p. 957.
Fracture Dislocations of Humeral Head. W. Van Hook, Chicago.—p. 960.

Treatment of Epilepsy by Various Methods.—A group of fifty male patients varying in age from 19 years to 66 years, with an average age of 41.1 years, and duration of epilepsy ranging from three and one-half years to fifty-eight years preceding treatment, with an average of twenty years during which seizures have taken place in the thirty-seven cases, having reference to the time when seizures were first noted, were placed under this drug and diet treatment by Ashmore for six months. In cases of both phenobarbital and the bromids, active treatment periods completed, the seizures were more nearly controlled with the former drug. From the standpoint of numbers and oftentimes in regard to severity, cases of idiopathic origin were more responsive. The diet and elimination treatment group obtains last place on the list, but this treatment is very important, either alone or in conjunction with other recognized methods of treatment. No particular laxative or cathartic appeared to be superior in effect to others during this period. Special care to avoid autointoxication in one group played a very important rôle in the reduction of seizures obtained. Beneficial effects were noted in all groups during posttreatment observation period.

Fibroma and Sarcoma of Ovary.—The two cases reported by Meigs are interesting because they combine fibroma with two different types of tumors, a fibrosarcoma in one case and a malignant papillary cystadenoma in the other. The opposite ovaries were involved in both cases, the first containing small fibromas and the other a malignant papillary cystadenoma.

Estimation of Peptic Activity of Gastric Contents.—McClure and Schabacker present a practical method for the estimation of peptic activity of gastric contents, conforming to the general principles of enzyme action as at present understood and describe the application of the method to the determination of peptic activity of the stomach contents of human beings.

Journal of Medical Research, Boston

August-October, 1922, **43**, No. 4

*Lymphoid Metaplasia (Hyperplasia?) in Mammalian Bone Marrow. E. B. Krumbhaar, Philadelphia.—p. 369.
Focal Infection; Bacteriologic Study of Gums in Two Hundred Cases. R. A. Keilty, Danville, Pa.—p. 377.
*Group of Virulent, Poison Producing Diphtheroids, Isolated Especially from Postscarlatinal and Other Cases of Otitis Media. F. Parker, Jr., New York.—p. 387.
Relation of Hemophages to Antibody Production. W. E. Cary, Chicago. —p. 399.
Preparation of Bacterial Antigens. C. O. Melick, Chicago.—p. 405.
Fixed Tissue Phagocytosis. S. Motohashi, Chicago.—p. 419.
*Sensitization Experiments with Tubercle Bacillus and Protein Extracts. M. I. Smith, Washington, D. C.—p. 435.
*Histology of Superior Lacrimal Gland in Mental Disease and Defect. M. M. Canavan, Boston.—p. 447.
Quantitative Studies on Wassermann Reaction. L. G. Hadjopoulos, New York—p. 455.
*Effect of Splenectomy on Production of Antibodies. S. Motohashi, Chicago.—p. 473.

Lymphoid Metaplasia in Bone Marrow.—In a monkey that had undergone splenectomy and partial myelectomy and nodectomy, two years previously, and had received injections of camphorated oil shortly afterward, the bone marrow was found by Krumbhaar at necropsy to be studded with lymphoid follicles, with well developed germ centers. He thinks it is

probable that these lymphoid follicles developed in response to a demand for more lymphoid tissue, as the result of one or more of the experimental procedures.

New Poison Producing Diphtheroids Isolated.—A bacillus previously undescribed has been isolated by Parker from subacute and chronic lesions in human beings, that is pathogenic for rabbits, guinea-pigs and white mice. The bacillus is evidently a poison producer as it always remains localized and also a poison can be produced in vitro giving the same pathologic changes as the living organisms. This poison is neutralized somewhat by normal horse serum and to a greater extent by diphtheria antitoxin, but not to such a degree as by its own antiserum. That this organism is definitely not an atypical diphtheria bacillus has been shown by immunologic tests.

Sensitization Experiments with Tubercle Bacillus.—The results of Smith's experiments would seem to indicate that the existence of a state of general hypersensitiveness to the protein of the tubercle bacillus in the tuberculous organism is not an essential of the infection. On the contrary, the development of the anaphylactic state in experimental infection appears to be conditional on the parenteral introduction of tuberculoprotein coincidentally with the infection. Whether or not general sensitization by the protein of the bacilli it harbors occurs in the tuberculous animal at some period of the disease cannot be stated definitely; the evidence at hand seems against it. It is further evident, Smith says, that there is no apparent relation between the tuberculin reaction and the anaphylactic state which may or may not exist in the experimentally infected animal. The fact disclosed by these experiments that "old tuberculin" is devoid of sensitizing properties further fails to lend support to the assumption that the tuberculin reaction is an anaphylactic manifestation.

Histology of Lacrimal Gland in Mental Diseases.—In a series of forty superior lacrimal glands removed from patients from 6 to 82 years of age, Canavan failed to find that the measurements equaled the one specified by Piersol as being the average, except in three cases of twenty-four measured. Distinct differences in size may occur on the two sides. Fat cells invade the gland at all ages. Fibrous tissue increases in amount as age increases. The glands do not react histologically to meningitis or encephalitis, appearing to be in no sense a phagocyte station. Lymphocytes and plasma cells are present between the acini in this series of cases of mental disease and defect, without regard to age. It is possible that these cells presage the formation of connective tissue. It is not impossible that these cells have an internal secretion.

Effect of Splenectomy on Antibody Production.—Motohashi states that the removal of the spleen from rabbits profoundly modified the production of specific hemolysins, both as to the site and as to the concentration in the blood stream. When, however, the amount of antigen employed is large, the resulting concentration of the antibody in the serum is equal in splenectomized and nonsplenectomized rabbits. When by splenectomy the macrophage activity of the bone marrow and liver is increased, there is a corresponding increase in the antibody producing power in these tissues.

Journal of Parasitology, Urbana, Ill.

December, 1922, **9**, No. 2

*Effects of Changes in Diet on Incidence, Distribution and Numbers of Certain Intestinal Protozoa of Frog and Toad Tadpoles. R. W. Hegner.—p. 51.
Phases in Parasitism of Unionidae. A. D. Howard and B. J. Anson, Fairport, Ia.—p. 68.
Prevalence of Hookworm and Other Intestinal Nematodes in Adult Filipinos. B. Schwartz and M. A. Tubangui.—p. 83.
Trypanosoma Brucei as Filterable Virus. W. W. Reich and T. D. Beckwith, Berkeley, Calif.—p. 93.
Larvae of Moniliformis Moniliformis (Brems) Found in African Cockroaches. T. Southwell.—p. 99.
New Methods in Nematode Technic. D. C. Hetherington.—p. 102.

Effect of Diet on Intestinal Protozoa.—Hegner's work was done with tadpoles some of which were fed a diet of flour mixed with gland extracts, and others an animal diet. Lack of food was found to be disadvantageous to the intestinal protozoa. Thyroid feeding results in the decrease both in incidence and numbers of intestine protozoa. It is interesting to note that the two substances that are known to bring about marked modifications in the intestine, namely, extracts of thyroid and prostate, affect adversely the intestinal protozoa. The animal diet seemed to have no effect on the protozoa.

Journal of Radiology, Omaha

December, 1922, **3**, No. 12

Radiotherapy in Carcinoma of Larynx: Radium Needles Through Thyrohyoid Membrane. G. E. Pfahler, Philadelphia.—p. 511.
Surgical Aspect of Cancer. C. Beck, Chicago.—p. 517.
Radium and Roentgen-Ray Treatment in Metastatic Testicular Tumors. H. H. Bowing, Rochester, Minn.—p. 519.
Roentgen-Ray Demonstration of Nasolacrimal Passageways — Normal and Obstructed. H. P. Doub and J. M. Carter, Detroit.—p. 521.
Peptic Ulcer. R. T. Wilson, Temple, Tex.—p. 524.
Bone Diseases; Osteoporosis or Lipomasia from Fixation and Nonuse. J. C. Bloodgood, Baltimore.—p. 528.

Journal of Metabolic Research, Morristown, N. J.

August, 1922, **2**, No. 2

Islands of Langerhans in Elasmobranch and Teleostean Fishes. Part I. The Skate. S. Jackson, Montreal.—p. 141.
*Source of Insulin. Study of Effect Produced on Blood Sugar by Extracts of Pancreas and Principal Islets of Fishes. J. J. R. Macleod, Toronto.—p. 149.
*Physical Measurements of Diabetic Patients. H. F. Root and W. R. Miles, Boston.—p. 173.
*Experimental Studies in Diabetes. IV. Lipemia. 1. Analysis of Blood Lipoids in Diabetic Animals and Patients. M. B. Wishart, New York.—p. 199.
*Id. 2. Production of Diabetic Lipemia in Animals, and Observations on Some Possible Etiologic Factors. F. M. Allen.—p. 219.

Source of Insulin.—As a result of the improved histologic technic introduced by Lane and Bensley and of the recent demonstration by Banting, Best, Collip, Macleod and Noble that an alcoholic extract of mammalian pancreas—known as insulin—profoundly lowers the percentage of blood sugar in normal rabbits, Macleod says, the whole question as to the significance of the islet tissue, and particularly whether it is the source of insulin, is reopened for investigation. There are two aspects to the problem, the one being to compare by modern histologic methods the exact cytologic structure of the islets in the mammalian and the *Elasmobranch* pancreas with that of the principal islets found by Rennie in the *Teleostei*, and the other, to study the effect of extracts prepared from these sources on the percentage of blood sugar in normal rabbits. In general, the plan of investigation has been to observe from time to time the amount of blood sugar in normal rabbits injected with extracts prepared from the following sources: (1) the pancreas of representative *Elasmobranchii* [*Squalus* (dog fish) and *Raja* (skate)]; (2) the principal islets of representative *Teleostei* [*Myoxycephalus* (sculpin) and *Lophius* (angler fish)], and (3) the zymogenous (acinar) pancreatic tissue, as free as possible from islets, in the same and certain other *Teleostei*. Potent insulin preparations were readily made from the pancreas of the cartilaginous fishes—the dog fish *(Squalus acanthias)* and the skate *(Raja)*. Still more so was this the case with the principal islets of Rennie, which are found in many of bony fishes, the Angler *(Lophius)* and the sculpin *(Myoxocephalus)*. Since these are readily available fishes, they may serve as a practical source of insulin. No insulin could be prepared from the pancreatic tissue proper (zymogenous or acinar) of the representative bony fishes *(Lophius myoxocephalus* and *Zoarces)*. Although the anatomic relationships of these tissues are still somewhat obscure, these results, in Macleod's opinion, afford strong direct evidence for the hypothesis that insulin, as its name implies, is derived from the insular and not the zymogenous tissue of the pancreas.

Physical Measurements of Diabetics.—A group of 133 diabetic men and women have been compared by Root and Miles with both Dreyer's and the medico-actuarial weight standards. Although normal in stature, they are found to have been, on the average, 20 per cent. overweight prior to the onset of the disease, and at the time of examination they were about 10 per cent. underweight. The fifty-six women showed more severe diabetes than the seventy-seven men, and as a class had much lower tolerance per kilogram of body weight, whether expressed as total available glucose,

or as the carbohydrate, in the diet. Glucose tolerance per kilogram of body weight is more uniform between different diabetic patients than is the carbohydrate tolerance. The latter appears, therefore, the more definitive expression for tolerance in diabetes. The older diabetics have been more obese, have lost a larger percentage of their maximum weight, and demonstrate the longer durations. Diabetics who have never been obese, according to medico-actuarial standards, are found to have been 10 per cent. overweight when compared with Dreyer's standard. They are distinguished by abnormally narrow chests and probably have been fat for their build. Obesity is closely related to the onset of diabetes mellitus, in fact, it is almost invariably present, but the intensity of the disease frequently appears inversely proportional to the amount of excess fat. The average diabetic patient is not physically fit, using body weight as an index. His vital capacity may be as large as that of normal persons, notwithstanding his bodily weakness. Vital capacity measurements in cases of uncomplicated diabetes are not clinically helpful.

Lipemia in Diabetes.—The combination of active severe diabetes and a high fat diet in Wishart's opinion is undoubtedly most conducive to lipemia. Some degree of lipemia, however, may be reckoned among the most stubborn symptoms of severe diabetes, and may persist for at least several weeks after disappearance of both hyperglycemia and acidosis, on diets very low in fat and total calories. Diets high or low, respectively, in cholesterol or lecithin have shown no decisive influence in either producing or clearing up lipemia. Diabetic patients or animals, known to be subject to lipemia, have not shown any remarkable retention of cholesterol in the blood when fed cholesterol or cholesterol rich foods. No uniform parallelism has been found between the sugar or acetone in the blood or urine and the accompanying degree of lipemia. The same is true of the carbon dioxid capacity of the plasma. Also, the giving of carbohydrate or its exclusion from the diet seems not to be a determining factor in lipemia. When active diabetic symptoms are restored by an excessive caloric diet composed essentially of protein, carbohydrate and alcohol, a definite though moderate lipemia seems to result as one of the active symptoms. It is undecided whether alcohol has any specific influence in lowering lipemia, comparable to its occasional temporary action in reducing hyperglycemia and glycosuria.

Experimental Diabetic Lipemia.—Severely diabetic dogs which digest high fat diets regularly develop some degree of abnormal lipemia, and in a minority of such animals this lipemia becomes extreme (15 per cent. or more of blood fat). It is known that the chemical peculiarities so far as the relations of neutral fat, cholesterol, lecithin, etc., are concerned, resemble those in human diabetic lipemia, though the great mass of the analytic results were lost. The chief positive result of Allen's investigation, therefore, is the establishment of a complete similarity between clinical and experimental diabetes in regard to lipemia. Apart from a sufficient supply of fat in the diet, the one indispensable prerequisite for diabetic lipemia is the existence of active severe symptoms in the form of glycosuria and severe cases with glycosuria abolished by diet never exhibit any extreme grade of lipemia, however high the fat intake. Diabetic lipemia evidently represents some secondary breakdown in fat metabolism, not directly connected with the endocrine function of the pancreas and not due merely to excess of fat in metabolism or loss of sugar from the body. There are wide variations in individual susceptibility to this disorder among both animals and patients. Tests with a wide variety of endocrine, dietary and other influences failed to reveal the nature of the disturbance or the origin of the susceptibility.

Journal of Urology, Baltimore

December, 1922, **8**, No. 6

Case of Double Kidney and Double Ureter; Review of Literature. C. M. Harpster, T. H. Brown and H. A. Delcher, Toledo, Ohio.—p. 459.

*Case of Extreme Dilatation of Ureters. T. F. Laurie, Syracuse, N. Y.—p. 491.

Supernumerary Ureters with Extravesical Openings. H. D. Furniss.—p. 495.

*Pathologic Complications with Duplication of Renal Pelvis and Ureter (Double Kidney). W. F. Braasch and A. J. Scholl, Jr., Rochester, Minn.—p. 507.

Double Kidney and Double Ureter.—The important facts concerning Laurie's case are that the patient, aged 37, had had infantile paralysis at 2½ years of age; that he has a curvature of the spine which began at 14; that in the urinary tract he has no apparent obstruction to urinary outflow and no interference with the mechanism of urination; the bladder is markedly contracted, the ureters and pelves markedly dilated. There are no signs of infection. He urinates about every hour during the day and about every two hours during the night. The desire to urinate is rather urgent.

Complications with Duplication of Kidney Pelvis and Ureter.—The 144 patients, whose cases are discussed by Braasch and Scholl, may be divided, according to incidence of pathologic conditions, into: Group 1, those who were operated on, 30; Group 2, those having definite pathologic lesions who were not operated on, 24; Group 3, those in whom the evidence of pathologic lesions was doubtful, 29, and Group 4, those without evidence of pathologic complication in whom the discovery of the condition was purely accidental, 61. Fifty-four patients were found to be suffering with definite pathologic complications. In the 30 patients in Group 1 who were operated on, the various lesions described were: ureteral obstruction with hydronephrosis or pyonephrosis in 8, renal tuberculosis in 6, renal lithiasis in 7, ureteral lithiasis in 3, and atrophic pyelonephritis in 4. In 1 case the aberrant ureter from the upper segment opened into the vagina; in another an anomalous vessel crossed the ureter causing obstruction. The lower segment of the kidney was primarily involved in 9 cases, and the upper segment in 5 cases; both segments seemed equally involved in 13 cases. It is evident that the pathologic complication is confined largely, if not entirely, to one segment in about one half of the cases, and, furthermore, that the lower segment is more often affected than the upper. Of the 24 patients in Group 2 who were not operated on, essential hematuria occurred in 4; unilateral infection in 2; bilateral infection (1 incomplete bilateral duplication) in 9; ptosis in 3; ureteral stones passed after manipulation in 3; and stone in the lower pelvis of a double kidney, left intact because of various complications in 3 cases.

New Orleans Medical and Surgical Journal

December, 1922, **75**, No. 6

Acute Appendicitis a Surgical Problem. P. Graffagnino, New Orleans.—p. 277.

Importance of History in Diagnosis of Tubal Pregnancy. E. L. King, New Orleans.—p. 288.

Observations with Roentgen Ray on Appendix. A. Henriques and L. J. Menville, New Orleans.—p. 292.

Diagnosis and Treatment of Flat Foot. E. S. Hatch, New Orleans.—p. 294.

Diagnosis of Foreign Bodies in Bronchi. R. C. Lynch.—p. 300.

Organization of 312th Medical Regiment. R. B. Shackelford, New Orleans.—p. 307.

Unusual Eruptive Disease in Childhood (Ecanthem Subitum): Report of Seven Cases. R. Crawford and G. R. Williamson.—p. 309.

New York Medical Journal and Medical Record

Dec. 25, 1922, **116**, No. 12

Alleviation of Pain in Severe and Fatal Illness. J. L. Corning, New York.—p. 677.

Physiologic Iodin. Essential Element in Animal Organism: Influence on Normal Metabolism: Relation to Glandular Activity, Control of Blood Pressure and Senility. A. J. Quimby, New York.—p. 680.

Neurosyphilis and Neurotropic Strains. J. A F Pfeiffer, Baltimore.—p. 683.

Amyostatic Syndrome: Lenticular, Striate or Dyskinetic Disease. J. V. Haberman, New York.—p. 687.

Surgical Treatment of Chronic Sciatica. W. J. Taylor, Philadelphia.—p. 693.

Urinary Methods of Value. J. Rosenbloom, Pittsburgh.—p. 696.

Rôle of Traumatic Factor in Pathogenesis of Pericolic Bands and Membranes. P. A. D'Acierno, West Hoboken, N. J.—p. 699.

Removal of Sharp Pointed Foreign Bodies from Rectum. A. A. Landsman, New York.—p. 703.

Primary Nodular Cancer of Pancreas. H. I. Goldstein, Camden, N. J.—p. 704.

Cancer of Rectum in Presence of Four Plus Wassermann. M. Golob, New York.—p. 706.

Treatment of Renal Affections by Mineral Waters and Baths. F. Kisch.—p. 709.

Law and Concern of Public Health. S. D. Hubbard, New York.—p. 711.

Drug Addicts and Riker's Island. J. A. Hamilton, New York.—p. 715.

New York State Journal of Medicine

December, 1922, **22**, No. 12

Cholecystitis; Its Relation to Infection of Liver and Pancreas. W. H. Barber, New York.—p. 543.
Urinary Calculi. T. F. Laurie, Syracuse.—p. 549.
Treatment of Bladder Tuberculosis After Nephrectomy. E. L. Keyes, Jr., New York.—p. 553.
Use of Radium in Treatment of Uterine Bleeding Other Than Cancer. H. B. Matthews, Brooklyn.—p. 556.
Incidence of Miscarriage in Private Obstetrical Practice with Discussion of Pathology. J. L. Huntington, Boston.—p. 559.
Pregnancy Complicating Heart Disease. H. E. B. Pardee, New York. —p. 564.
Digestive Complaints of Cardiac Patient. T. F. Reilly, New York.—p. 568.
Quackery and Causes for Its Growth. M. Nicoll, Jr., New York.—p. 572.

Pennsylvania Medical Journal, Harrisburg

December, 1922, **26**, No. 3

Doctor of Old School. E. J. G. Beardsley, Philadelphia.—p. 133.
Concerning University Extension Postgraduate Medical Work. G. H. Meeker, Philadelphia.—p. 140.
Physiologic Consideration of Nephritis. G. A. Clark, Scranton.—p. 144.
Postoperative Insanities. D. J. McCarthy, Philadelphia.—p. 153.
Acute Empyema of Thoracic Cavity. E. C. Winters, Ford City.—p. 159.
State Control of Syphilis. S. L. Gans, Harrisburg.—p. 162.
State Control of Diphtheria. J. B. McCreary, Harrisburg.—p. 163.
State Control of Puerperal Sepsis. E. B. Piper, Philadelphia.—p. 164.
*Napkin Eruption of Jacquet. S. Crawford, Pittsburgh.—p. 165.
*Human Tuberculosis of Bovine Origin. I. H. Alexander, Pittsburgh.—p. 173.
Abnormalities of Nose and Throat of Interest to General Practitioner. H. M. Goddard, Philadelphia.—p. 177.

Napkin Eruption of Jacquet.—Crawford advises washing the buttocks with a solution of boric acid. After careful drying, a dusting powder may be used, consisting of 2 per cent. boric acid powder in talc; or the mopping on of a powdery lotion composed of 5 per cent. each of calamine and zinc oxid powders in lime water, to which 2 per cent. boric acid may be added, is good. A lotion of 5 per cent. each of bismuth subnitrate and zinc oxid in lime or rose water, or one of equal parts each of milk of magnesia, black wash, and lime water may be indicated. In some cases dusting powders and powdery lotions do not act so well, and in these Lassar's paste, either half or full strength, may be applied as a thin protective coating. The parts should be cleansed gently with a mild soap and warm water, dried and then treated with one of the above or similar lotions. The diapers should be of some soft, nonirritating material, should be scrupulously clean always, and careful watch made for their soiling, when they are immediately changed. Diapers should never be washed in strongly alaline soaps, and after washing should be rinsed in a weak solution of boric acid, phenol or cresol, etc. Indigestion, fermentation and other gastro-intestinal disturbances are to be corrected. Any suspected reflex disturbance should be corrected, if possible. Alkalis by mouth often prove of value. In the treatment of infectious conditions such as impetigo, vacciniforme ecthyma, etc., milk antiseptic washes, such as a 5 per cent. solution of boric acid or a 1:5,000 mercuric chlorid solution, followed with a mild antiseptic ointment, such as a 1 per cent. ammoniated mercury, will bring about prompt healing. Infantile seborrhoeic dermatitis responds readily to a milk (1 per cent.) sulphur ointment.

Human Tuberculosis of Bovine Origin.—The transmutation of type has not been proved to the satisfaction of the great majority of students of internal medicine, but, Alexander says, the question of human tuberculosis of bovine origin is now generally accepted. Bovine tuberculosis, as found in man, is due to the drinking of milk from tuberculous cows. The use of meat of animals having tuberculosis is of very little, if any, importance in producing tuberculosis in man. The remedy is to make examination of all dairy cattle compulsory and to refuse a permit to sell milk to all dairymen whose herds are not free from reactors. This would not only be a great aid to public health, but would benefit the beef raising industry tremendously. The city should require all milk to be pasteurized according to whatever method necessary, to reduce the danger of infection to the minimum. The present practice of permitting diseased animals to be slaughtered in private slaughter houses and sold to the public as healthy food products, should be overcome by requiring all animals to be slaughtered under competent inspection, and the smaller butchers whose business is not sufficiently large to require a full-time inspector, should have their animals slaughtered in a municipal slaughter house where competent inspection could be carried out.

Public Health Journal, Toronto

December, 1922, **13**, No. 12

Industrial Hygiene. H. A. Chisholm, Halifax, N. S.—p. 529.
Some Phases of the Mental Hygiene Problem. E. K. Clarke.—p. 536.
Source of Infection. J. J. Cameron, Antigonish, N. S.—p. 543.
Value of Quarantine in Communicable Disease. J. J. Middleton, Ontario.—p. 547.
Social Case Sheet Investigation. Result of Survey of Venereal Disease Patients in Hospital Clinics in City of Toronto During Months of July and August, 1922. M. Kensit.—p. 553.
Church as a Social Agency. F. N. Stapleford.—p. 563.

South Carolina Medical Association Journal, Greenville

December, 1922, **18**, No. 12

Relation That Legislation Should Have to True Medical Profession. D. M. Crosson, Leesville.—p. 342.
Treatment of Chronic Diarrhea. F. M. Durham(Columbia.—p. 346.
Gastric and Intestinal Flatulence; A Digestive Bugbear. G. M. Niles, Atlanta, Ga.—p. 349.
Cholecystitis. T. B. Reeves, Greenville.—p. 351.

Southwestern Medicine, Phoenix, Ariz.

December, 1922, **6**, No. 12

Importance of Diagnosis in Some Lesions of Genito-Urinary Apparatus. C. S. Vivian and W. W. Watkins, Phoenix.—p. 415.
Chronic and Subacute Appendix Disease. W. W. Watkins, Phoenix.—p. 426.
Development, Reestablishment and Maintenance of Breast Milk. E. M. Tarr, Phoenix.—p. 435.
Bacterial Growth in Gastro-Intestinal Tract. E. C. Prentiss, El Paso. —p. 439.

Tennessee State Medical Association Journal, Nashville

December, 1922, **15**, No. 8

Heart Disease from Standpoint of Prevention. W. H. Witt, Nashville. —p. 345.
Diagnosis of Early Pulmonary Tuberculosis. W. S. Rude, Ridgetop.—p. 350.
Diagnosis of Extra-Uterine Pregnancy. J. A. Crisler, Memphis.—p. 354.
Pyelitis. C. F. Anderson, Nashville.—p. 358.
Present Status of Pyloroplasty. W. M. McCabe, Nashville.—p. 363.

Virginia Medical Monthly, Richmond

December, 1922, **49**, No. 9

Deficiency Diseases: Diseases Resulting from Faulty Diets. J. Goldberger, Washington, D. C.—p. 489.
Pediatric Aspects of Nutritional Diseases. L. T. Royster, Norfolk.—p. 494.
Orthopedic Aspects of Nutritional Diseases. T. Wheeldon and J. B. Fitts, Richmond.—p. 498.
Neurologic Aspects of Nutritional Diseases. F. H. Redwood, Norfolk. —p. 503.
Cutaneous Aspects of Nutritional Diseases. T. W. Murrell, Richmond. —p. 505.
Certain Aspects of Medical Education. T. Hough, University.—p. 509.
Diphtheria in Virginia. A. H. Straus, Richmond.—p. 513.
Changes in Small Town Brought About by Health Department. B. B. Bagby, West Point.—p. 517.
Layman in Public Health. R. K. Flannagan, Richmond.—p. 519.
Oxygen Supply and Demand in General Anesthesia. R. C. Whitehead, Norfolk.—p. 523.
Spondylitis Deformans (Marie-Strümpell Type). A. F. Voshell, University.—p. 525.
Vertigo. J. Dunn, Richmond.—p. 528.
Chronic Gastric and Duodenal Ulcer. P. S. Smith, Abingdon.—p. 532.
Surgical Treatment of Chronic Gastric and Duodenal Ulcer. A. P. Jones, Roanoke.—p. 537.
Roentgen-Ray Phases of Chronic Gastric and Duodenal Ulcer. J. F. Armentrout, Roanoke.—p. 539.
Rectal Surgery. E. H. Terrell, Richmond.—p. 540.

Wisconsin Medical Journal, Milwaukee

December, 1922, **21**, No. 7

Challenge of Chronic Patient to Medical Profession. L. T. Brown, Boston.—p. 253.
Relationship of Goiter to Chronic Patient. H. G. Sloan, Cleveland. —p. 257.
Relationship of Pulmonary Tuberculosis to Chronic Patient. W. H. Swan, Colorado Springs, Colo.—p. 261.
Relationship of Abdominal Symptoms to Chronic Patient. J. A. Lichty, Pittsburgh.—p. 266.
Relationship of Surgical Abdomen to Chronic Patient. E. Andrews, Chicago.—p. 273.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Dec. 23, 1922, **2**, No. 3234

*Hodgkin's Disease. J. Galloway.—p. 1201.
*Surgical Treatment of Nontraumatic Affections of Spleen. J. Carslaw, E. H. Kettle and K. Dalziel.—p. 1204.
*Five Years' Survey of Routine Treatment of Fractures by Operative Methods. A. Young.—p. 1209.
*Temporary Plating of Fractures of Long Bones. G. H. Edington.—p. 1214.
Treatment of Ununited Fractures by Bridge Grafts. D. Duff.—p. 1215.
*Extrapleural Thoracoplasty in Treatment of Pulmonary Tuberculosis. P. Bull.—p. 1217.
Chronic Duodenal Ileus. D. P. D. Wilkie.—p. 1219.
Infection by Bacillus Pyocyaneus Simulating Leprosy. S. Mallannah.—p. 1223.
Hereditary Deformities. G. T. Kevern.—p. 1223.
Vagina Infra Septa, Supra Simplex. S. M. Lawrence.—p. 1223.

Bence-Jones Protein in Hodgkin's Disease.—A case of so-called Hodgkin's disease is related by Galloway in which there was constantly present in the urine a protein similar to the "Bence-Jones albumin" in that it is coagulated on heating, redissolves on further heating, and reappears on cooling. It differed in that it did not coagulate below 75 C. Full coagulation occurred from 79 to 82 C. It only coagulated in the presence of a considerable amount of acids and salts like sodium chlorid or ammonium sulphate and became quite insoluble if kept at 80 C. (in the presence of acid and salt) for some minutes. It was not precipitated by hydrochloric acid under any conditions. The new protein is best detected by noting the precipitate in the cold with sulphosalicylic acid—the urine itself failing to give a heat coagulum under optimum conditions of reaction (that is, just acid to brom-cresol-purple). The new protein often separated in flocculi as the urine cooled. Microscopic and other investigations of the urine gave no evidence of true nephritis. The necropsy completely confirmed the diagnosis in the case. The kidneys were unusually affected; the capsules were greatly thickened, but stripped off easily. There were cysts in both kidneys; microscopic examination showed that the cortices of the kidneys contained small areas of the characteristic overgrowth of the disease. In another case the temperature was a perfect example of the relapsing type. With respect to roentgen-ray treatment of this disease, Galloway says, it seems to be possible in certain cases, and apparently when too rapid resolution of the lymphoid masses takes place under this irradiation, that very severe reactions with serious rise of temperature and other untoward results may follow these exposures. This phenomenon, in Galloway's opinion, suggests that alien protein poisoning occurs as the result of the breaking down and absorption of the newly formed cells. However, the tumors of Hodgkin's disease do not always diminish under roentgen-ray treatment. In some cases the application has little or no beneficial effect; it is possible that in these cases much fibrous change has taken place in the glands, so that little beneficial effect from roentgen rays can be expected.

Surgical Treatment of Nontraumatic Affections of Spleen.—In Carslaw's opinion the mere finding of splenomegaly is not an excuse for operation, neither are malaria and syphilis, although trauma of the spleen in the subject of malaria may necessitate operation. He discourages operation also in leukemia and in Hodgkin's disease. In pernicious anemia he is not convinced that operation is called for; certainly not if the spleen is small. It may be, he says, that there are various types of pernicious anemia and that some of them are more suitable for operation than others. But in splenic anemia, if the patient's health and development are chronically poor, if repeated attacks of splenic pain occur, if from its size the spleen is distressing, and above all, if the danger of hemorrhage seems to have supervened, the spleen should be removed, and that without waiting too long. For if the disease is allowed to advance to the latter stage when cirrhosis of liver and, perhaps, ascites have developed, not only is the operation more difficult but the chances of ultimate success are lessened owing to the changes in the liver. The greatest successes of splenectomy seem to have been achieved in cases of acholuric jaundice. There are, however, mild cases of this disease which may not require operation. But if hemolysis is extreme and the patient's condition is seen to be deteriorating, the operation should be recommended.

Fixation of Fractures Endorsed.—Young endorses the direct fixation of fracture fragments by open operation and cites his experiences in proof of his contention.

Temporary Plating of Long Bone Fractures.—Temporary plating is recommended by Edington in the case of the tibia, femur and humerus as being a reliable form of internal splinting. With the object of encouraging the formation of callus, the periosteum should be reflected from the area to which the plate is to be applied. Plates and screws should be removed in from three to four weeks. Looseness or fixity of screws at the time of removal is in proportion to the reaction or sluggishness of the bone, and would seem to be an index to the progress of repair.

Extrapleural Thoracoplasty for Pulmonary Tuberculosis.—In unilateral or mainly unilateral cases of pulmonary tuberculosis in which a cure is not effected by rational expectant treatment or pneumothorax, Bull is convinced that good results can be achieved by means of extrapleural thoracoplasty. Resection of the ribs should be carried out, under local or general anesthesia, through a paravertebral incision so that the posterior part of the ribs from the eleventh, or in any case from the tenth, to the first inclusive can be removed. If a cavity remains, it can be collapsed by means of intrathoracic transplantation of fat. The procedure will save one third of the patients who, without the operation, would be doomed.

Edinburgh Medical Journal

December, 1922, **29**, No. 6

Early Anatomic Instruction at Edinburgh. J. D. Comrie.—p. 273.
Old Time Reminiscence of Trench Foot. D. M. Greig.—p. 297.
Chronic Interstitial Nephritis in Childhood: Renal Infantilism (?). H. L. Watson-Wemyss.—p. 300.
Case of Solitary Cyst in Humerus. K. P. Brown.—p. 306.

Journal of Tropical Medicine and Hygiene, London

Dec. 15, 1922, **25**, No. 24

Synopsis of Family Linguatulidae. L. W. Sambon.—p. 391.

Lancet, London

Dec. 23, 1922, **2**, No. 5182

*Surgery of Spinal Cord. W. Thorburn.—p. 1313.
*Treatment of Lupus by Diathermy Condenser Spark. A. E. Milner.—p. 1316.
*Effect of Radiation with Mercury Vapor Quartz Lamp. E. M. Hume.—p. 1318.
*Effect of Radiation with Mercury Vapor Quartz Lamp on Growth of Rats Fed on Diet Deficient in Fat Soluble Growth Promoting Factor. H. Goldblatt and K. M. Soames.—p. 1321.
*Drugs in Treatment of Diabetes Mellitus. P. J. Cammidge, J. A. C. Forsyth and H. A. H. Howard.—p. 1324.
Cases of Obscure Infection. R. Fielding-Ould.—p. 1328.

Surgery of Spinal Cord.—Thorburn's paper is based on the following cases: recent injury, 7 cases; remote injuries, 18 cases; gunshot injuries, 10 cases; caries of the spine, 19 cases; syphilitic pachymeningitis, 7 cases; malignant tumors of the vertebrae, 5 cases; tumors between the laminae and dura mater, 3 cases; intrathecal tumors of the spinal cord, 7 cases; spina bifida occulta, 2 cases; rhizotomy for the relief of pain, 6 cases; exploration and drainage, 12 cases.

Treatment of Lupus by Diathermy.—The total number of cases of lupus vulgaris treated by Milner with the diathermy condenser spark and the careful use of roentgen-ray radiations to soften the resulting scar tissue was fifty-two. Of these twenty-four patients remain cured after from one to two years; twenty-eight are still under treatment. The average number of operations for each case cured was 3.1.

Effect of Radiation with Mercury Vapor Quartz Lamp.—From the experiments reported by Hume it is apparent that irradiation with the mercury vapor quartz lamp can prolong normal growth on a diet almost free, or free, from vitamin A. Whereas without irradiation growth ceased to be normal

after from seven to ten days, with irradiation it continued to be normal for from thirty-five to fifty days. Symptoms of vitamin A deficiency then began to appear, and symptoms of xerophthalmia set in earlier than in control animals. Attempts to revive growth and to cure xerophthalmia by irradiation of animals which had long (over ninety days) been on a deficient diet failed completely; the animals seemed, if possible, to go to pieces more rapidly. Irradiation of rats which had been for shorter periods (from seventeen and thirty-five days) on a vitamin A deficient diet produced a growth response which appeared to be inversely proportional, in its duration and extent, to the length of the previous period of deficient diet. The general conclusion drawn is, that there is an interaction between vitamin A and light for the growth of rats, but that the action of the light is not to produce a photosynthesis of the vitamin.

Effect on Growth of Radiation with Mercury Vapor Quartz-Lamp.—It is shown by Goldblatt and Soames that young rats, if irradiated with the mercury vapor quartz lamp from the time they are put on a diet very deficient in fat soluble vitamin A grow more rapidly, reach a higher maximum weight, continue to grow for a longer period, and, finally, show a general condition better than that of control rats from the same litter receiving the same diet but no irradiation. Similar differences between irradiated animals and controls were observed even in the case of a litter of rats brought up by a mother who was fed on the same deficient diet during the latter part of pregnancy and the entire period of lactation. It is apparent that irradiation with the mercury vapor quartz lamp cannot act as a substitute for the fat soluble growth promoting factor which is a necessary element of the diet.

Drugs in Treatment of Diabetes Mellitus.—In the opinion of Cammidge et al. treatment by drugs will never replace control of the diet in diabetes. They endeavor to show that if the food tolerance has been accurately determined and is found to be inadequate, then, and only then, the aid of appropriate drugs may be invoked to enable a maintenance diet to be taken and prolong the patient's existence under more comfortable conditions. They record experiments, indicating the way in which various drugs control carbohydrate metabolism, thus laying the foundations of a rational therapy.

Medical Journal of Australia, Sydney

Nov. 18, 1922, **2**, No. 21

Clinical Symptoms of Enlargement of Spleen in Children. H. D. Stephens.—p. 575.
*Bile Pigments in Blood. M. Cowen and S. W. Patterson.—p. 581.
Fractures. A. Aspinali.—p. 582.
Complete Case of Leukemia in Childhood. W. D. Upjohn and H. B. Graham.—p. 585.

Bile Pigments in Blood.—Cowen and Patterson regard the Van den Bergh test as being a delicate reaction for bile pigments in the serum. It is more sensitive to bile pigment than Gmelin's test. They carried out the test on the serum of patients with obvious or suspected hepatic disease and patients suffering from anemia. Bilirubin is usually present in appreciable quantities in the blood. Jaundice and a direct reaction with Van den Bergh's test were found together in all instances but five of thirty-two cases. One of these patients was not clinically jaundiced at the time of testing, but stated that he had been jaundiced some time previously; his serum gave the biphasic reaction and quantitatively an increased amount of bilirubin was present. At operation a pyloric carcinoma with secondary deposit in the liver was found. In a case of cirrhosis of the liver the patient was not jaundiced and the reaction was biphasic. These cases are compatible with Van den Bergh's explanation of the biphasic reaction occurring when there is combined obstruction of ducts and functional alteration of the liver cells. Two patients suffered from catarrhal jaundice and, although jaundiced, gave no direct reaction in the serum, pointing to a functional alteration of liver cells rather than an obstruction in this disease. Another patient presented symptoms of biliary colic; he was jaundiced, but his serum did not give the direct reaction. He refused operation and the final diagnosis was not completed.

Medical Journal of South Africa, Johannesburg

November, 1922, **18**, No. 4

Gastric Ulcer. P. N. Vellacott.—p. 83.
Surgical Treatment of Gastric Ulcer. R. Daly.—p. 92.
Skin Diseases. C. Pijper.—p. 93.

Gynécologie et Obstétrique, Paris

October, 1922, **6**, No. 4

*The Hypogastric Plexus. A. Latarjet and Rochet.—p. 225.
*Experimental Radium Treatment. A. Kotzareff and M. Mollow.—p. 244.
*Pneumococcus Puerperal Septicemia. C. Monckeberg.—p. 274.
*Amputation of Cervix Above the Isthmus. H. Hartmann.—p. 277.

The Hypogastric Plexus.—Latarjet published in 1913 a study of this plexus in man, and he here reports research on this plexus in connection with the innervation of the uterus. Among the practical points brought out is the possibility of local anesthesia for operations on the uterine cervix by blocking the nerve branches passing to the lower uterus. The cervix is drawn down after the side culdesacs have been exposed well with the speculum. A fine needle is then introduced on each side of the cervix, to a depth of 2.5 or 3 cm., parallel to the cervix, and at the point where the lateral culdesac joins the wall. About 5 c.c. of the 2 per cent. solution of procain is then injected fan-wise. Another practical suggestion is the necessity for special care not to injure at operations the bladder nerves passing through the base of the broad ligament. Injury of these nerves explains the urinary disturbances which sometimes complicate abdominal hysterectomy or the Wertheim operation. The damage is done when the ureter is being freed, or the uterine artery ligated, or the bladder is being detached from the vagina. Loosening up the ureter from within outward usually molests less these external satellite cords which form the greater part of the bladder nerves at this point. Ligation of the uterosacral ligaments may likewise injure nerve filaments and explain postoperative pelvic neuralgia.

Action of Radium on the Uterus.—Radium emanations applied to the uterus and ovaries of guinea-pigs induced phenomena of shock. No effect on the tissues was apparent with doses less than 2 millicuries and sixty-two hours of exposure. Above this dose the effect is seen in degeneration and necrosis, with hyperemia and hemorrhagic foci and proliferation of connective tissue. The effect is the same whether the emanation is injected in a fluid vehicle or a needle applicator is used. The blood becomes radioactive; this induces phenomena of shock and organic lesions when injected into untreated animals. This radium-treated blood or blood serum was injected subcutaneously into other untreated animals, and it seemed to vaccinate them, as it were. After this, exposure to the radium emanations the same as before was not followed by shock, but otherwise the resulting organic lesions with the same doses seemed to be the same as in the untreated guinea-pigs, although less intense.

Pneumococcus Puerperal Septicemia.—The woman of 33 developed fever the third day after normal delivery, and the pneumococcus was found in the lochia but not in the mouth or nose. The midwife who had attended the woman was found to have chronic left tonsillitis, and her sputum contained numerous pneumococci. An autogenous vaccine was injected in the parturient, but pneumococcus pneumonia and peritonitis developed and proved fatal the thirteenth day.

Cervicectomy.—Hartmann reproduces Dartigue's five large illustrations showing the various steps of the operation with which he restored clinically normal conditions in a case of massive atresia of the cervix which had followed too intense application of Filhos' caustic. The operation is the reversal of the usual supracervical amputation, the cervix being cut away and leaving the uterus with a new portio. The bladder-uterus pouch is pushed up, without incising it, through an anterior transverse colpotomy. The uterus is then slit on the median line, thus leaving the uterine artery unmolested. Then the cervix is resected with a tapering point on each side of each stump. The triangular gap left in the cervix stumps is closed by suturing the mucosa lining of the cervix with the vaginal mucosa. He calls the operation a supra-isthmus cervicectomy and stomatoplasty by bilateral vertical évidement.

Journal de Médecine de Bordeaux

Nov. 25, 1922, **94**, No. 22

Diagnosis of Aortic Aneurysms. Cassaet and Secousse.—p. 731.
Total Inversion of Uterus and Necrotic Polyp in Vagina. F. and R. Villar.—p. 734.

Dec. 10, 1922, **94**, No. 23

*Congenital Scoliosis. H. L. Rocher and R. H. Noirit.—p. 767.

Congenital Scoliosis.—Rocher and Noirit describe six new cases of varying degrees of congenital scoliosis.

Journal de Médecine de Lyon

Dec. 5, 1922, **3**, No. 70

*Deficiency Diseases. E. Weill and G. Mouriquand.—p. 715.
*Latent Otitis in the New-Born. P. Chatin.—p. 727.

Prevention and Cure of Deficiency Diseases from Qualitatively Deficient Food.—Weill and Mouriquand believe that the laboratory results cannot be applied in nutrition in spite of their mathematical aspect, unless "filtered" by clinical experience, which is the only measure of their practical value. The vitamins are not the only substances lack of which may cause disease by qualitative deficiency of food. They discuss beriberi, scurvy, xerophthalmia and pellagra as the four certain examples of such diseases. Beriberi is not without practical interest since the authors proved that it may be provoked in pigeons by any cereals, beans or peas, sterilized or deprived of the outer layer. Together with Michel they showed that a similar syndrome may occur in cats fed on sterilized meat. Beriberi can be prevented by other substances, not only by the hulls of rice. While beriberi seems certainly to be an avitaminosis, no such thing is proved for scurvy, another typical disease of this group. At least no antiscorbutic vitamin has yet been isolated. While beriberi occurs in an infant nourished by a mother suffering from the disease, scurvy is not transmitted by nursing. Oranges, lemons, fresh tomatoes prevent scurvy. They do not consider pellagra a simple avitaminosis, but rather a disease due to multiple deficiencies. The lack of certain amino-acids seems to play a part. The conditions which precede these diseases are of more importance than the stage of full development. Variety in food is not sufficient; it must be well selected. The authors have shown that a mixture of different decorticated cereals causes beriberi just as certainly as any one of them alone.

Frequency and Severity of Latent Otitis in Nurslings.—Chatin surveys the frequency of otitis media in necropsies on nurslings. It varies from 75 to 100 per cent. He publishes the history of nineteen nurslings who died from different diseases (bronchopneumonia, enteritis, athrepsia, etc.). In sixteen cases pus was found in the middle ear (thirteen times on both sides). Two had mucopus, and only one child, 1 day old, had a healthy middle ear. Pneumococci, staphylococci and other organisms were found in the fluid. He believes that otitis aggravates the condition of the infants, and may cause meningism indirectly. The tympanic membrane does not always present changes in these cases. Paracentesis may be valuable.

Journal d'Urologie, Paris

October, 1922, **14**, No. 4

*Epitheliosarcoma of the Bladder. C. Lenormant.—p. 273.
*Pleural Metastasis of Kidney Cancer. C. Roubier.—p. 285.
*Pyocyaneus Urethritis. A. Grimberg and M. Uzan.—p. 289.
*Some Minor Points in Treatment of Gonorrhea. J. Janet.—p. 291.
*Transactions of French Urologic Congress.—pp. 293-341.

Mixed Tumor of Bladder.—The epitheliosarcoma growing from the bladder of a woman of 55 weighed 570 gm. Its base was in the wall of the bladder, and the top of the bladder had to be resected with the tumor. The operation was concluded with suprapubic cystostomy. In a little more than a month the bladder was functioning approximately normally, and the woman has been in good health since, with clinically normal micturition. There never had been any symptoms calling attention to the bladder; the disturbances had been entirely from the pressure on the genital organs, principally, recurring metrorrhagia. It did not return after the operation. The tumors of this type seem to be more benign than tumors of the bladder proper; some aberrant embryonal tissue seems responsible for them.

Kidney Cancer in Young Pregnant Woman.—The malignant disease in the kidney and the multiple involvement of glands and huge metastatic tumor in the left pleura ran their entire course from the first symptoms to death in three months. The pregnancy became spontaneously interrupted at the sixth month, and the woman died three days later.

Pyocyaneus Urethritis.—Grimberg and Uzan banished the gonococcus by injection of large amounts of a stock antigonococcus vaccine. Then they applied an autogenous vaccine to get rid of the other micro-organisms involved in the urethritis. In the young man whose case is described, this included the pyocyaneus as well as the staphylococcus. This dual vaccine therapy cured him completely.

Treatment of Gonorrhea.—Janet discusses how to reenforce treatment when the ordinary measures are not promptly effectual. The strength of the permanganate solution can be increased from 0.25 per 1,000 to 0.3 or 0.4, and for the anterior urethra even to 0.5 or 0.75. Or some other drug might be used instead of the permanganate. He prefers for this mercury oxycyanid, using it in progressive doses, from 0.15 to 0.5 per 1,000.

Diverticula of the Bladder.—This was the subject appointed for discussion at the Urologic Congress, the transactions of which are given in full.

Paris Médical

Nov. 25, 1922, **12**, No. 47

*Roentgen Ray Epithelioma Cured by Diathermy. H. Bordier.—p. 469.
Piece of Glass in the Knee Joint. J. Madier.—p. 471.
*Vaccine Therapy and Mixed Infections. A. Grimberg.—p. 474.
*Dystrophic Syndrome. C. Papastratigakis (Athens).—p. 475.
Senile Tuberculosis and Fixation of Complement. P. Gros.—p. 476.
*The Cerebrospinal Fluid During Herpes Zoster. R. Targowla.—p. 480.

Roentgen-Ray Epithelioma of Fingers Cured by Diathermy.—Bordier reports the favorable result of this method used by himself on himself.

Vaccine Therapy and Mixed Infections.—Grimberg points out that many infections are combined. In the preparation of vaccines, all the organisms should be included in equal amounts.

Dystrophic Syndrome.—Papastratigakis describes a man aged 22 with total alopecia, cataract of the right eye, and trophic lesions of the finger nails. He regards it as a new dystrophic syndrome.

The Cerebrospinal Fluid in Herpes Zoster.—Targowla confirms the presence of inconstant and slight changes in the cerebrospinal fluid in herpes zoster. They consist in increased pressure, lymphocytosis, and increase in albumin (not in globulins). The benzoin reaction is negative.

Presse Médicale, Paris

Nov. 25, 1922, **30**, No. 94

*Retention of Nitrogen in the Blood. H. Chabanier et al.—p. 1017.
*Extraglobular Parasites of Blood. Blanchard and G. Lefrou.—p. 1020.
Treatment of Pulmonary Tuberculosis in the German Tuberculosis Conference. L. Cheinisse.—p. 1021.

Prognosis in Retention of Blood Nitrogen.—Chabanier, Lobo-Onell and Marquezy studied the prognosis of cases with chronic retention of nitrogen. Widal's determination of prognosis according to the amount of urea in the blood gives only average results. Men with more than 0.3 per cent. of urea have survived for more than four years. The renal insufficiency is comparatively constant; the patients usually die from sudden attacks of increased azotemia. The prognosis has to consider the probability of such crises. The occasion may be an infection—even a slight one—intoxication (mercury, anesthetic), or heart failure, especially in hypertension. The increase in azotemia is sometimes due to oliguria, sometimes to a direct alteration of the function of the kidneys (lowering of the maximal concentration). This latter type is more dangerous. Besides this there is some extrarenal factor, which may cause severe trouble in patients with 0.2 per cent. of nitrogen in the blood, while others live with 0.5 per cent.

Extraglobular Parasites of Blood.—Blanchard and Lefrou recommend Bruce and Nabarro's method, modified by Martin, Lebœuf and Roubaud: 1 c.c. of sterilized 20 per cent. solu-

tion of sodium citrate and 10 c.c. of blood are mixed and centrifugated for ten minutes at 1,500 turns per minute. The plasma is taken off and centrifugated for the second time. In this second sediment most of the filarias can be found. The third sediment contains trypanosomes and spirochetes.

Nov. 29, 1922, **30**, No. 95

*Edema in Laennec's Cirrhosis. A. Lemierre and J. Lévesque.—p. 1029.

Edema in Laennec's Cirrhosis.—Lemierre and Lévesque describe a case of atrophic cirrhosis of the liver with ascites and severe edema. On a salt-free diet the edema gradually disappeared after repeated tapping of the ascites. The weight remained stationary between the punctures so that it is apparent that the fluid from the anasarca was used to reproduce the ascites. Salt-free diet has a very good influence in edema but not on the ascites. The ascites recurs and takes the necessary salt from the blood. The patients become depressed and lose appetite if the treatment is continued. The authors discuss the possible causes of edema in atrophic cirrhosis, and emphasize the bad prognostic significance.

Progrès Médical, Paris

Dec. 2, 1922, **37**, No. 48

Case of Late Infantilism. A. Philibert.—p. 561.
*The Liver in Chronic Infections of Children. Lereboullet.—p. 564.
Case of Syphilis of the Liver. L. Giroux and G. Lory.—p. 568.

The Liver in Chronic Infections of Children, Especially in Syphilis and Tuberculosis.—Lereboullet reviews extensively the liver changes in syphilis and tuberculosis. Other chronic infections, except malaria, are of no importance for the liver.

Archivio Italiano di Chirurgia, Bologna

October, 1922, **6**, No. 1

*Scleroma of Larynx and Trachea. G. Forni.—p. 1.
*Accidental Surgical Injury of Colic Arteries. G. B. Macaggi.—p. 28.
*Purulent Pleurisy. C. Cignozzi.—p. 39.
*Symmetrical Lipomatosis of the Neck. M. Bufalini.—p. 73.
Case of Papilloma Cancer of the Bladder. N. Giannettasio.—p. 96.

Scleroma of the Larynx and Trachea.—Forni reports three cases in which scleroma began to induce symptoms at the age of 27, 28 and 20. The gradual onset of the difficulty in breathing aids in differentiation. Operations to remove the hardened patches do not cure permanently as the tendency persists. In his cases the two men of 28 and 61 and the woman of 27 had had tracheotomy and laryngofissure repeated twice and the patches scraped out, but they kept forming again. The man of 28 had worn a tracheal tube for several years but was able finally to discard it. Return of the suffocation compelled an emergency low tracheotomy, but the operation showed the walls of the trachea much thickened, and the man succumbed to dyspnea and cyanosis. The others are still living and both have derived great benefit from postoperative roentgen treatment.

Surgical Injury of Arteries of the Colon.—Macaggi's experiments on ten dogs have demonstrated that surgical injury of the arc of anastomosis between the middle and the left colic artery does no harm. If the trunk of the middle colic artery or of the homonymous artery is cut, or both at once, a hemorrhagic infarct may follow, but the consequences are never severe enough to compromise the nourishment of the colon, and the parts rapidly recuperate. Hence at operations involving the mesocolon, especially posterior retrocolic gastroenterostomy, accidental injury of these vessels need not be regarded as of grave import.

Operative Treatment of Purulent Pleurisy.—Cignozzi analyzes his experiences with 100 cases. He always operated without local or general anesthesia; only to a few adults he gave an injection of morphin an hour beforehand. He thinks that his experience confirms the superior advantages of an incision in the back, 9 or 10 cm. long, the center on an extension of the angle of the scapula; resection of not more than 5 cm. of the eighth rib; incising the pleura for 2 or 3 cm.; placing the patient horizontal as rapidly as possible, reclining on the side of the operation. He has the patient sit on the edge of the table, the sound side supported slightly slanting by the raised end of the table. The arm on the empyema side is placed on the vertex of the head, and over the ear of the other side. This spreads the interspaces and throws into relief the angle of the scapula. The immediate introduction of a gauze plug as the pleura is incised allows only small amounts of fluid to escape as it drains out under the influence of gravity. In the 20 fatal cases the suppuration had been under way for from thirty-one to sixty-five days; the deaths occurred between the sixth and tenth day after operation. The article is illustrated.

The capillary drainage at first is superseded by tube drainage after the first two days.

The general toxic condition is combated with subcutaneous injection of horse serum from horses previously treated with nucleoproteins. He injects 100 c.c. of the horse serum in 250 or 300 c.c. of physiologic solution, with 30 drops of epinephrin solution, repeating this daily for three to five days. The complete cure without deformity of the chest, the full expansion of the lung in about three weeks, and the regeneration of the rib, as the periosteum is left entire, insure prompt healing without deformity.

Symmetrical Lipomatosis of the Neck.—Bufalini did not find any spirochetes in the symmetrical lipomas removed from the neck of the syphilitic man of 57. The microscope indicated a chronic inflammatory process involving lymph glands and aponeurosis, probably of syphilitic origin.

Pediatria, Naples

Dec. 1, 1922, **30**, No. 23

*Vaccine Treatment of Typhoid. G. Sillitti.—p. 1099.
*Reflexes in the New-Born. F. de Angelis.—p. 1107.
*Varicella Following Herpes. A. Gismondi.—p. 1114.
Pathology of Bones. A. F. Canelli and G. B. Audo-Gianotti.—p. 1126.

Anaphylaxis and Antianaphylaxis in Typhoid Patients Treated with Vaccines.—Sillitti publishes seven cases of infants with typhoid fever treated with vaccines. The reaction seems to be of anaphylactic nature, and in subsequent injections one can sometimes observe even a state of anti-anaphylaxis.

Reflexes in the New-Born.—De Angelis examined the reflexes in eighty-eight healthy infants in the first week of life. He found that all the reflexes are usually present, although the pupil reflexes may be sluggish, and the plantar in 43 per cent. inverted. Yet it is very difficult to determine the quality of the plantar reflex because of spontaneous movements.

Varicella Following Herpes.—Gismondi reports varicella in an infant occurring fourteen days after an attack of herpes zoster in the child's aunt. No other case of varicella was in the surroundings at the time. Gismondi reviews the literature on the question of the etiologic relation between the two diseases.

Policlinico, Rome

Dec. 4, 1922, **29**, No. 49

*Copper Sulphate Reaction in Cerebrospinal Fluid. A. Medi.—p. 1589.
*Thoracocentesis and Pneumothorax. F. Rossi.—p. 1592.

Copper Sulphate Reaction in Cerebrospinal Fluid.—Medi finds the reduction test with cerebrospinal fluid very valuable. To 2 c.c. of cerebrospinal fluid 3 drops of each of the two solutions of Fehling are added. Purulent meningitis gives a slight or no reduction. He observed that purulent meningitis fluids give an amethyst color before boiling, owing to the presence of peptones. Tuberculous meningitis gives a less distinct color, but causes reduction. Tumors, hydrocephalus and serous meningitis give a blue color, and reduce strongly.

Thoracocentesis and Pneumothorax.—Rossi describes a new apparatus for thoracocentesis followed by artificial pneumothorax.

Dec. 1, 1922, **29**, Medical Section No. 12

*Hereditary Ataxia. P. Mino.—p. 615.
*Sthenic Function and Myasthenia Gravis. Calligaris.—p. 662.

Hereditary Ataxia.—Mino publishes one case and reviews extensively the literature on the etiology of the disease. Exogenous factors are unimportant. Hereditary ataxia seems to be a genetic complex, inherited as a recessive character.

The Sthenic Function and Pseudoparalytic Myasthenia Gravis.—Calligaris emphasizes the sthenic, as well as tonic, function of the extrapyramidal motor apparatus.

Riforma Medica, Naples

Nov. 27, 1922, **38**, No. 48

*Implantation of Nerves in Suprarenal Capsules. D. Maragliano.—p. 1133.
*Determination of Bilirubin in Blood. A. de Martini.—p. 1136.
*Spontaneous Separation of Dermoid Cyst. L. Fioravanti.—p. 1137.
Treatment of Carbuncle by Extirpation. D. Taddei.—p. 1139.

Implantation of Nerves in Suprarenal Capsules.—Since free transplants of suprarenal capsules are absorbed in a few weeks, Maragliano tried to prevent it by implantation of splanchnic or spinal nerves into the organs. Yet the nerves did not proliferate, if he left the capsules in place, nor if he transplanted them with the nerve. The absorption of the transplanted capsule was not prevented by this proceeding.

Method of Determination of Bilirubin in Blood.—Martini's modification of Hijman ven den Bergh's method consists in the acidification with acetic acid and the use of a mixture of eosin and methylene blue as the standard.

Spontaneous Separation of a Dermoid Cyst from the Ovary.—Fioravanti describes a case of ovarian dermoid which separated spontaneously from its peduncle, and continued to grow in the omentum.

Dec. 4, 1922, **38**, No. 49

*Lipoma of the Mammary Region. L. Torraca.—p. 1157.
*Action of Roentgen Rays on Tuberculosis. E. Musante.—p. 1160.
*Williams' Symptom in Tuberculosis. C. Guarini.—p. 1162.
Anomalies of Articulation of Teeth. B. de Vecchis.—p. 1163.

Lipoma of the Mammary Region.—Torraca describes a rare case of a large lipoma situated in the deep mammary region (subpectoral) in a man.

Action of Roentgen Rays on Tuberculosis.—Musante irradiated with small doses of roentgen rays the apices of the lungs and the spleen, or the spleen alone, in tuberculous patients. He found especially an increase in complement and agglutinins lasting for twenty-four hours.

Significance of Williams' Symptom in Early Roentgenologic Diagnosis of Pulmonary Tuberculosis.—Guarini is skeptical about the value of Williams' diaphragm phenomenon.

Archivos Españoles de Pediatría, Madrid

October, 1922, **6**, No. 10

*Hypospadias and Epispadias. I. Sánchez-Covisa.—p. 577.
Dietetic Treatment of Gastro-Intestinal Derangement in Infants. J. Bravo Frias.—p. 614.

Treatment of Hypospadias and Epispadias.—Sánchez-Covisa reviews the various methods for correction of congenital deformity of the urethra as he has applied them and analyzes the advantages and the drawbacks of different technics. He bases the indications for operating on the size of the organ, rather than age, but always before puberty, when possible. He reports two cases in adults in which the results of the Duplay-Marion technic were perfect, both as to aspect and function, although a long segment of the urethra had to be reconstructed. Thirty-seven illustrations accompany the article. He disapproves of any attempt to operate for minor deformities, which do not alter the genital or urinary functions, unless the patient or the family insist. He found the Hamilton-Roussel operation delicate and difficult. Young's method of treating epispadias is superior to all others, he says, both theoretically and in the simplicity of the technic and the rapid healing. He has applied it in two cases, both adults, with absolute incontinence of urine. In future he will supplement it with Young's latest autoplastic procedure to remove the last trace of the tendency to incontinence. He has encountered at Madrid 55 cases of hypospadias among 6,500 urologic cases, but scarcely a dozen instances of epispadias.

Archivos Latino-Amer. de Pediatría, Buenos Aires

October, 1922, **16**, No. 10

*Artificially Fed Infants. L. Morquio.—p. 609. Conc'n.
*Malaria in Infant. M. H. Bortagaray.—p. 640.
Diverticulum Binding Down Infant's Intestine. M. Valabrega.—p. 646.
Banti's Disease in Child. S. Satanowsky.—p. 654.
*Gangrene of Lung in Young Child. F. Rodriguez Gómez.—p. 658.
*Sarcoma of Omentum in Girl of Ten. A. Segers.—p. 662.
Aortic Insufficiency of Rheumatic Origin. E. Portu Pereyra.—p. 667.
*Age as Affecting Measles. A. Olarans Chans.—p. 670.

Digestive Disturbances in Artificially Fed Infants.—Morquio emphasizes the four classes of disturbances to which the artificially fed are liable, the dyspeptic, the toxic-infectious, the trophic and the parenteral. We have to bear in mind also congenital and acquired taints and various etiologic causes which differ according to locality, customs and individuals. The great lesson he draws from his extensive data is that treatment of digestive derangement—aside from breast feeding—has to be strictly individual. The tolerance for food, even when more or less complete, is above all influenced by the one factor, the season. There is no pathology of alimentary origin during the winter, with rare exceptions. Breast milk in lung and bronchial affections is not only the best food but the best medicine for the infant. He warns against treating the digestive disturbances which accompany otitis, pneumonia, measles and other parenteral affections. The green stools may mislead the physician to restrict the child to a water diet and purge it. But this, he declares, is wrong; the parenteral affection is what must be sought and treated, and the child should not be taken from the breast. The gastro-intestinal indications are entirely subordinate.

Malaria in Four Months' Infant.—The mother had chronic malaria. The child seemed healthy during the first week of life but then developed extremely grave malaria. This subsided promptly under quinin, given by the rectum for two days, and then by the mouth.

Gangrene of Lung in Child.—Subsequent to Vincent's angina in the girl, aged 2½, both purulent pleurisy and pulmonary gangrene developed, fatal in about six weeks from the first symptoms. The spirilla and fusiform bacilli were cultivated from the effusion in the pleura.

Sarcoma of Omentum.—The onset of the fibrosarcoma was febrile in the girl of 10 years, and the diagnosis was "typhoid fever with enlarged spleen," until the child reached the hospital on the twenty-first day. The tumor could be palpated through the rectum, and was safely removed two months after the first symptoms. The child soon gained 9 kg. in weight.

Prognosis of Measles.—The great importance of age in the prognosis of measles and the advantages of delaying it as much as possible are emphasized. Convalescents' serum provides a means for sparing at least the younger children.

Brazil-Medico, Rio de Janeiro

Sept. 16, 1922, **2**, No. 37

*Century of Progress. Afranio Peixoto.—p. 155.

A Century of Progress in Public Health Matters.—In this centennial address, Peixoto reviewed the medical history of Brazil. The death rate now in many Brazilian cities is lower than in certain cities in western Europe. Bahia (22.24) is lower than Dublin (24.95); Rio de Janeiro (19.62) than Nice (19.65); Florianopolis and Curityba have a death rate below 16. He describes the history of various diseases in Brazil: cholera with its 200,000 victims in 1867; plague introduced in 1899; yellow fever known in Brazil since 1685 but absent from Rio since 1908. He says that progress requires the education of the public, the inculcation of hygiene, the wearing of shoes, sanitary provisions, etc. "Of what avail is the work of the Rockefeller Commission, of the sanitary authorities, the system of 'rural prophylaxis,' etc., in administration of chenopodium, thymol or naphthol, to those infested with parasites, so long as there are no provisions for hygiene. Reinfestation is inevitable, and begins the very day the cure is complete. It is like carrying water in a basket."

Revista Española de Medicina y Cirugía, Barcelona

September, 1922, **5**, No. 51

*Reconstruction of the Beard Region. J. F. S. Esser.—p. 499.
*Conduction of Electric Current in Diathermy. L. Cirera Salse.—p. 504.
Interpretation of Urine Findings. Vellvé Cusidó.—p. 509.

Autoplastics of Bearded Region.—Esser's illustrations show his method of twisting around a flap from the scalp to use in reconstruction of the chin and cheek.

Mechanism of Diathermia.—Cirera Salse discusses the conductibility of the human body for the high frequency current, as affecting diathermia.

October, 1922, **5**, No. 52

Typhoid Fever in Barcelona. A. Salvat Navarro and F. Proubasta.—p. 563.
*Prostatectomy. M. Serés.—p. 577.
Therapeutic Dietetics. A. Arteaga Pereira.—p. 593. Cont'n.

Transvesical Prostatectomy.—Serés reviews the indications, technic and results of transvesical prostatectomy as he has applied it in 170 cases.

Semana Médica, Buenos Aires

Oct. 26, 1922, **2**, No. 43

*Hydatid Cyst of the Liver. M. R. Castex.—p. 837.
Serologic Tests in Hydatid Cysts. Fernández Ithurrat.—p. 857.
*Biologic Reactions in Hydatid Cysts. Fernández Ithurrat and B. N. Calcagno.—p. 864.
*Suprarenal Insufficiency. Washington Alvarez.—p. 869.
*Prophylaxis of Scarlet Fever. A. B. Ribeyrolles.—p. 872.
Radiography of Gallstones. Carlos Heuser.—p. 875.
Retention of Placenta from Continuous Spasm. A. Borton.—p. 876.
Symptomatology of Respiratory Apparatus. A. Viton.—p. 879.
Reformatories for Inebriates. V. Delfino.—p. 882.

Hydatid Cysts of the Liver.—This was the official address opening the discussion on echinococcus disease at the recent national medical congress at Buenos Aires.

Biologic Reactions in Echinococcus Disease.—From the extensive experiences related it is evident that the diagnosis can be based with confidence on the Imaz-Lorentz seroreaction, supplemented by examination of the blood for eosinophilia, and the intradermal hydatid reaction. It is instructive further to repeat the seroreaction with unheated serum. To interpret the findings better, the hemolytic index of the blood should be recorded.

Suprarenal Insufficiency.—Washington Alvarez relates that two girls, 10 and 12 years old, presented intense pure suprarenal insufficiency. One was convalescing from typhoid, and the agonizing pains suggested perforation of a viscus. Under 4 drops of epinephrin solution, three times a day for six days, all the symptoms promptly subsided. In the other case, the child had both malaria and typhoid, but she recovered under epinephrin kept up for nine days. A third patient was a man of 50 with chronic malaria and signs of suprarenal insufficiency. He improved under epinephrin and quinin, but the periods of weakness, hypertension and other signs of suprarenal deficit have returned at times during the year since. The necropsy findings are described further in an infant, aged 6 months, who had succumbed to acute chloroform intoxication. Both suprarenals showed extensive hemorrhages.

Seroprophylaxis of Measles and Scarlet Fever.—Ribeyrolles is a navy medical officer. He reports favorable experiences with the Milne method in warding off contagion, and also with passive serotherapy by injection of convalescent serum, in persons who had been exposed to these diseases. He declares that as the serum is homologous, there are no contraindications to its use. The persons thus immunized never displayed any tendency to serum sickness or anaphylaxis.

Siglo Médico, Madrid

Oct. 28, 1922, **70**, No. 3594

*Death of Child from Tetanus. Martinez Vargas.—p. 413.
Etiology of Puerperal Endometritis. L. G. Gret.—p. 415.
Fibroma of Lobule of Ear. C. Jiménez López et al.—p. 420.
Tetanus from Slight Scratches. F. Sánchez Grangel.—p. 421.

Death of Child from Tetanus.—Martinez Vargas does not hesitate to declare that the cabinet minister in Spain who cut off the appropriation this year, compelling the abandonment of the bureau of standardization of serums, vaccines and pharmaceuticals, is responsible for the death of the child whose case he reports. It is the first case of tetanus in his service in fifteen years, and the first death. He gave the usual preventive course of tetanus antiserum after the accident. Its complete failure can be explained only, he says, by the poor quality of the antiserum. Something similar occurred several years ago, when the diphtheria death rate rose as a result of defective preparation of the antitoxin.

Archiv für Verdauungs-Krankheiten, Berlin

October, 1922, **30**, No. 3-4

*Gastroscopy. R. Schindler.—p. 133.
Potato Test Meal. E. Gabbe.—p. 167.
Treatment of Peptic Ulcers with Deformity of Stomach. M. Einhorn. —p. 175.
*Antipepsin in Stomach Contents. L. Jarno.—p. 191.
Functional Test of Sugar Metabolism. Offenbacher and Hahn.—p. 203.
Insufflation of Intestine Through Stomach for Roentgen-Ray Diagnosis. Fuld and O. Weski.—p. 207.
*Amebic Dysentery. I. Hansen.—p. 209.
*Technic for Prevention of Vicious Circle. F. Ehrlich.—p. 219.
Comment on "Quantitative Determination of Pepsin." O. Gross.—p. 227.
Reply. L. Jarno.—p. 229.

Gastroscopy.—Schindler reviews critically the different gastroscopes, and describes his own. He mentions a case in which a physician introduced the instrument by mistake into the larynx and right bronchus, and perforated the lung.

Antipepsin in Gastric Juice.—Jarno believes that the antipeptic action of the gastric juice is due to sodium taurocholate, glycocholate and other substances, regurgitated into the stomach. All of them are capable of inhibiting the digestion of solid proteins, which explains the indigestibility of hard boiled eggs.

Amebic Dysentery.—Hansen reports four cases of amebic dysentery treated successfully with emetin.

Constriction with Strip of Fascia of Afferent Leg Between Gastro-Enterostomy and Entero-Anastomosis. — Ehrlich reports eleven cases influenced favorably by this method, but avows that he is opposed to any operative treatment as long as the patient is able to work, and without great discomfort.

Deutsche medizinische Wochenschrift, Berlin

Dec. 1, 1922, **48**, No. 48

*Diet in Kidney Disease. H. Strauss.—p. 1603.
Symptoms Remaining After Appendectomy. L. Kuttner.—p. 1604.
*Physiology and Pathology of Spleen. G. Lepehne.—p. 1606.
Progressive Torticollis After Trauma. W. Schmitt.—p. 1607.
Skin Phenomena in Diseases of the Myeloid System. E. Zurhelle.—p. 1610.
*Bruck's Serodiagnosis of Syphilis. W. Teichmann.—p. 1612.
*Bladder Symptoms and Low Position of Right Testicle. Adler.—p. 1612.
Expectorants. G. Joachimoglu.—p. 1613.
*Treatment of Tuberculosis with Camphor. B. Alexander.—p. 1614.
*Dosage of Codein in Children. W. Salomon.—p. 1614.
Band for Venous Stasis. C. O. Leege and W. Schmidt.—p. 1615.
Compulsory Vaccination and the "Conscientious Objector." A. Grotjahn.—p. 1616. Idem. F. Prinzing.—p. 1618. Idem. Gins.—p. 1619.

Diet in Kidney Disease.—Strauss limits his paper to the discussion of treatment of degenerative affections (nephrosis) and of nephrosclerosis. Increased fluid intake is to be recommended only in cases which have a lowered power of concentration. In other cases, especially heart failure and some hydropic forms, restriction of fluids may be indicated. Restriction of proteins is necessary if the functional tests demonstrate a tendency to retain their products. One should not forget that excessive restriction may do harm. Salt has to be restricted in cases with a tendency to edema. The diet can be made agreeable by the use of spices, which are harmless if given in small amounts. Alcohol may be given only exceptionally as a remedy. Bouillon should be replaced by vegetable soups. Milk should be given in amounts which give consideration to its protein content. Cheese may be useful for rendering certain other dishes more palatable. An appetizing crust on meat is a valuable aid in salt-free diet. Well boiled eggs are allowed; sweets and dishes prepared with flour are to be recommended. Butter may be freed from salt by kneading it in water.

Physiology and Pathology of the Spleen.—Lepehne reviews the function of the spleen as an organ which serves partly as a "regionary lymphatic gland of the blood" (Helly), partly as an endocrine organ influencing the production of blood cells, and partly in relation to the metabolism of iron and cholesterol. The destructive action on red corpuscles and platelets and the question of production of antibodies are especially discussed.

Bruck's Centrifuge Method in Serodiagnosis of Syphilis.—Teichmann reports favorably on Bruck's method of centrifugalizing a mixture of serum and extract in a 10 per cent. solution of sodium sulphate. The suspension of the extract

must always be tested first with a positive and negative serum.

Nervous Bladder Symptoms and Low Position of Right Testicle.—Adler found among twenty-two cases with low position of the right testicle only four without enuresis. He sees in the low position of the right testicle (lower tonus of the right cremaster) a sign of functional debility of the lowest part of the spinal cord.

Treatment of Tuberculosis of Lungs with Camphor.—Alexander recommends his method of treatment of tuberculosis with injections of camphorated oil. He gives up to 5 c.c. daily, but stops for some days if the patient feels better. Alexander claims that it enables patients to feel better and to work. In early cases camphor is given only in periods of fever or hemoptysis.

Dosage of Codein in Children.—Salomon finds that the usual doses of codein for children are so small that they are without any effect. He used in several hundred cases the following doses: In the first half year of life 2 to 3 mg. pro dosi ($\frac{1}{20}$-$\frac{1}{30}$ grain); second six months 4 to 6 mg. In the second year from 6 mg. to 1 cg. In the fifth year, about 0.014 gm.; in the tenth, 0.02 gm. ($\frac{1}{3}$ grain). The dose is best given at night, and it is better not to divide it.

Jahrbuch für Kinderheilkunde, Berlin

October, 1922, **99**, No. 6

*Ulcer of Urethral Orifice. J. v. Bokay.—p. 303.
*Bacteria in Stools of Infants. J. Zeissler and R. Käckell.—p. 308.
*Fever in Children. K. Dajceva.—p. 321.
Comment on "Leukolysins." G. Caronia.—p. 327. Reply. Stransky. —p. 336.
*False Passage in Intubation. C. v. Ujj.—p. 337.
Report of First Munich Congress for Orthogenics. Eliasberg.—p. 343.

Ulcer of Urethral Orifice.—Bokay draws attention to this affection of the external urethral orifice of boys aged less than 7 years. Almost all of them had been circumcised and live in poor, very unhygienic surroundings. Incontinence of urine may be one of the etiologic factors. Dysuria is present, but stops after removal of the crust. Silver nitrate and boric acid ointment cure the affection.

Bacteria in Stools of Infants.—Zeissler and Käckell consider Gram's method absolutely inadequate for bacteriologic examination of feces. The differentiation between *Bacillus acidophilus, bifidus* and other gram-positive bacilli can be made only by special methods of cultivation.

Fever in Children.—Dajceva divides feverish children into two types according to the reaction to antipyretics: One group reacts quickly and strongly, no matter whether drugs or baths are used. The other group reacts slowly or not at all. Most of the children belonging to the second group present nervous (meningo-encephalitic) symptoms, which may be based upon either anatomic conditions or only symptomatic. Some of the children in this group are neuropaths; many are rachitic.

False Passage in Intubation.—Ujj describes a case of diphtheria in which forcible introduction of the tube resulted in the formation of a false passage. Cricotracheotomy saved the child, though a little time was lost because the diagnosis was not made immediately, and artificial respiration was tried first. An examination for a false passage should always be made if the child shows a tendency to suffocation after intubation.

Monatsschrift für Kinderheilkunde, Leipzig

October, 1922, **24**, No. 1

*Anemia in Children. H. Lehndorff.—p. 1.
*Calcium in Blood in Spasmophilia. K. A. Zahn.—p. 45.
*Blood Picture Changes in Children. E. Nassau and E. Schohl.—p. 51.
Treatment of Whooping Cough. K. Ochsenius.—p. 60.
Comparison of Different Diagnostic Tuberculins. M. Frenzel.—p. 70.
*Action of Atropin on Stomach of Infants. A. Salomon.—p. 75.
Survey of Dermatology in 1921. C. Leiner.—p. 84.

Anemia in Children.—Lehndorff reviews the differences between the blood corpuscles and the reactivity of the hemopoietic organs in children and adults, and gives a survey of the present status of diagnosis and treatment of the diseases of these organs. The main feature in children is the exaggerated reaction to toxic agents. Megaloblasts do not signify in them a pernicious anemia, but simply a reversion to the embryonic type, which is possible during the first two years. The youngest forms of leukocytes in anemia pseudoleukemica infantum are not a sign of leukemia here. The disease may disappear completely. Predisposition accounts for the fact that we see these reactions only in certain infants. The anemia of premature births is of two types: One is almost physiologic and lasts for three months, irrespective of the treatment. The other type is not fully explained, and may be due to some action of the fats of the milk or lack of vitamins. One should not forget the possibility of endogenous factors and of infection. This type of anemia is usually cured by a diet almost free from milk and containing plenty of vegetables.

Calcium in Blood in Spasmophilia.—Zahn examined the blood of three children with tetany, fifteen with a positive facialis phenomenon, and eight with other diseases. Only one case of tetany showed a lowered concentration of calcium ions by Trendelenburg and Goebel's method, although all three had very low total calcium content. In latent spasmophilia some cases had a low calcium content, but others were normal.

Blood Picture Changes in Children.—Nassau and Schohl find that in fever of long duration a normal blood picture speaks for chronic pharyngitis and against tuberculosis of glands. The latter brings younger forms of neutrophils into the circulation. "Umbilical colic" does not change the proportion between the younger and older forms of neutrophils, while appendicitis does change it. Yet, confusion with other diseases, for instance pleuritis, is possible.

Action of Atropin on Stomach of Infants.—Salomon found that atropin lowers the tonus of the stomach in infants, and slows the peristalsis. It does not alter the secretion of acid, nor act on the pylorus. He explains the favorable results of large doses of atropin in the treatment of pylorospasm by its action on the musculature of the whole stomach. While a normal infant shows a reddening of the scalp after one to two drops of a 0.1 per cent. solution of atropin sulphate, when it is indicated (vagotonia), the infants may tolerate much larger quantities—up to 6 drops, six or eight times daily. Atropin very often gives excellent results in the habitual vomiting of infants.

Münchener medizinische Wochenschrift, Munich

Nov. 17, 1922, **69**, No. 46

*Perlingual Administration of Drugs. F. Mendel.—p. 1593.
Comment on Engel's "Blood in Lead Poisoning." G. Seiffert.—p. 1595.
*Prophylaxis of Roentgen Ray Injuries. G. Holzknecht.—p. 1597.
Spasm of Vessels During Delivery. H. Hinselmann.—p. 1598.
Staining of Spirochetes with Silver and Neosalvarsan. W. Krantz.—p. 1598.
Dold's Turbidity Reaction in Syphilis. K. H. Kiefer.—p. 1600.
*Thyroid Treatment for Uterine Hemorrhage. R. Kräuter.—p. 1601.
Murder by Quickly Repeated Introduction of Arsenic; Death in Fifty Hours from First Dose. Goroncy.—p. 1606.
Case of Embryotomy in Unrecognized Transverse Presentation. Durlacher.—p. 1607.
*History of Influenza and Encephalitis. J. E. Kaiser-Petersen.—p. 1608.
Indications for Surgical Treatment of Ulcer of Stomach. A. Krecke. —p. 1609.

Perlingual Administration of Drugs.—Mendel points out that many drugs, especially lipoid-soluble drugs, are easily resorbed from the surface of the tongue. This is of therapeutic significance. The action of nitroglycerin, if it is swallowed, is uncertain. One drop of a 1 per cent. alcoholic solution of it smeared over the tongue acts quickly. No habit formed, taken thus, and the drug keeps its influence. Atropin sulphate applied in a similar way acts as if it had been given by injection, as well as strychnin nitrate, other alkaloids, and narcotics in an alcoholic solution. Two drops of a 1 per cent. solution of strophanthin smeared over the tongue with the finger acted in fifteen to thirty minutes. It was not possible, however, to disguise the taste of it.

Prophylaxis of Roentgen-Ray Injuries.—Holzknecht discusses the reasons for the increasing frequency of injuries by roentgen rays. The acute necrotic ray ulcer is usually due to forgetting to insert the filter. He recommends the use of automatic devices that will shut off the current if the filter is forgotten. The constant potency of the tubes is

not so perfect as the manufacturing plants pretend. Of all the regulators, only the one which controls the primary current seems to be good. Therefore it is necessary to measure not only the time of exposure, but to apply a dosimeter besides, if one wishes to avoid an overdose. The serious local injuries to the bowel, larynx, brain and other organs happen in strong irradiations of several fields, with errors in computing the homogeneity in the depths. As yet, we can avoid them only by giving lower doses. The late necrosis is due to the tendency to shorten the intervals between the applications. A full cutaneous dose needs in the average eight weeks of rest. If a cosmetic effect is to be considered, this interval should be doubled. In urgent cases (cancer), the pause may be reduced to one half. The severe general reactions are justified only when we can expect a good result. They increase the cachexia of hopeless cases. The results of modern intensive treatment are far from being as good as some roentgenologists promise. "Not one case of certain cancer has been cured." Holzknecht does not believe in the irritating action of smaller doses and recommends therefore with the exception of some cancers of the uterus, to divide the irradiation and not to give the highest possible doses. The giving of two thirds or one half of it is beneficial, although the results are not ideal, and the patients do not suffer from the general injury.

Thyroid and Bleeding from Uterus.—Kräuter finds that some cases of menorrhagia and metrorrhagia which present signs of a lowered function of the thyroid can be influenced favorably by thyroid gland treatment.

History of Influenza and Epidemic Encephalitis.—Kaiser-Petersen shows that in eight epidemics of influenza occurring between the years 1580 and 1833 there were always cases presenting symptoms of lethargic encephalitis.

Zentralblatt für Gynäkologie, Leipzig

Dec. 2, 1922, **46**, No. 48

Significance of Cells Within Zona Pellucida. H. Hinselmann.—p. 1906.
A Peculiar Case of Postoperative Hemorrhage. A. Sippel.—p. 1909.
Subcutaneous Emphysema in Parturients. K. Riediger.—p. 1910.
Statistics on Febrile Abortion. H. A. Dietrich.—p. 1912.
Eclampsia Statistics of Baden for Year 1920. Gessner.—p. 1914.
*Radium in Treatment of Uterine Affections. H. Schaedel.—p. 1918.

Radium in the Treatment of Benign Uterine Affections.—Schaedel discusses the technic employed and the results secured by the use of radium in the treatment of 500 cases of benign uterine affections. The os uteri is widened by means of laminaria tents. For diagnostic reasons, a curettage is done, and the radium preparation is then introduced within the body of the uterus by means of forceps. Iodoform gauze is inserted within the cervix to prevent the radium from slipping out, but a free passage for the uterine secretions must be left. The vagina itself is plugged with tampons. The intervention takes place under ethyl chlorid anesthesia and requires only two minutes at the most. The radium is left in place from thirty-six to forty-eight hours. The radium preparation was employed up to thirty-eight hours in all hemorrhages of the climacteric, provided there had been no recent inflammation of the adnexa. Radium was used, up to forty-eight hours, in myomas that were not larger than a good-sized fist, ninety-eight being thus treated. Radium was employed also in hemorrhages that occurred as the result of disturbances of internal secretion. During the application of the radium, 62 per cent. of the patients complained of slight nausea, loss of appetite and a mild headache; in 18 per cent. sedatives were administered. In one patient the radium had to be removed after eight hours because of severe vomiting, restlessness and diarrhea. The other patients had no bad symptoms. In all, the symptoms disappeared promptly after removal of the radium. In 60 per cent. of the patients the menses were completely arrested; 18 per cent. had one period, somewhat weaker than usual, and 22 per cent. had a second menstruation, the longest duration of which was three days. The radium does not affect the graafian follicles but only the uterine mucosa. Amenorrhea never alternated with oligomenorrhea or polymenorrhea, as occurs after roentgen irradiation. The after-effects were also more favorable in the case of radium.

Zentralblatt für innere Medizin, Leipzig

Dec. 2, 1922, **43**, No. 48

*Duodenal Contents in Pancreas Diagnosis. L. R. Grote.—p. 777.

Diagnosis of Pancreas Function from Duodenal Contents.—Grote made comparative studies on twenty-five cases, with the duodenal fluid obtained after application of 2 to 4 c.c. of ether through the tube, and examination of feces after a test meal. The results were in many cases contradictory. First of all, the estimation of ferments (trypsin and diastase) in the duodenal contents gives such widely different results, even in healthy persons, that no normal value can be stated. Ether induced a good secretion, but Grote points out that this is no proof that the gland can always produce a sufficient amount of fluid, especially on physiologic stimulation. Cases which showed poor digestion of meat in the feces had sometimes very good ferments in the duodenal contents. Yet he admits that cases with a pancreatic lesion had little juice before ether was applied. There was also in some cases an interesting dissociation between diastase and trypsin (much diastase and little trypsin), although this diastase may originate in the saliva. The methods of pancreas diagnosis by the duodenal juice have too many sources of error. The differences in the juices taken from different parts of the duodenum are great, and the action of ferments depends very much on the hydrogen ion concentration and the presence of products of digestion. It is not possible to analyze satisfactorily the single factors. Clinically, we need to know the function of the bowels as a whole. This problem is solved in an ideal way by the test meal and subsequent examination of the stool. The determination of ferments in the duodenal juice cannot replace it.

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*Brain Disease with Eye Symptoms. F. S. Stibbe.—p. 2142.
*The Connective Tissue. II. G. C. Heringa.—p. 2148.
*Movements of the Uterus. I. A. Wijsenbeek and A. Grevenstuk.—p. 2155.
*Radiotherapy of Rectal Cancer. G. F. Gaarenstroom.—p. 2165.
*Gnawing of Fingers. I. Bak.—p. 2170.
Vaccine Therapy of Whooping Cough. L. K. Wolff.—p. 2174.

Localization of Brain Disease from the Ocular Symptoms.—Stibbe theorizes to show that a gumma in the right peduncle would explain the paresis of the sphincter of the right pupil, associated with left hemiparesis—the syndrome in the first case he describes. In the second, softening from syphilitic endarteritis in the posterior cerebral artery would explain the homonymous hemianopsia without atrophy of the optic nerve.

The Connective Tissue.—Heringa presents evidence which upsets some of the present views as to the structure and significance of the connective tissue.

Movements of the Uterus.—Research on rabbits with a window in the abdomen has shown that the regular movements of the normal uterus are much reduced during the first half of gestation. They become progressively more marked in the second half.

Radium and Roentgen-Ray Therapy of Cancer of the Rectum.—Gaarenstroom reports two cases of cancer of the rectum, in a woman aged 53 and a man aged 29. Both cancers were inoperable when first seen, but after an artificial anus was made, under radium combined with roentgen-ray treatment the malignant disease subsided to such an extent that the earning capacity was regained, and they have been free from disturbances now for five and six years. The radium therapy had been vigorous, up to 4,000 and 3,300 milligram elements, and the patients had displayed exceptional fortitude and perseverance in completing the full course.

Febrile Autophagia.—In Bak's case the Java coolie died in coma after an acute febrile disease with somnolence and motor disturbances. In the course of the disease he ate the soft parts entirely from the terminal phalanx of some of the fingers. Instead of the anticipated findings of epidemic encephalitis, nothing pathologic could be found anywhere at necropsy. Bak records the case merely as a disease the chief characteristic of which was autophagia.